Permit / Application Information Sheet
Division of Environmental Protection
West Virginia Office of Air Quality

Company:	Wolf Run Mining LLC			**Facility:**	Sentinel Facility
Region:	6	**Plant ID:**	001-00005	**Application #:**	13-0119D
Engineer:	Roberts, Dan			**Category:**	Coal
Physical Address:	Route 119/250 South to Route 7 Philippi WV 26416			**SIC:** [1221] COAL MINING - BITUMINOUS COAL & LIGNITE - SURFACE **NAICS:** [212111] Bituminous Coal and Lignite Surface Mining	
County:	Barbour				
Other Parties:	MANAGER - Nair, Greg 304-265-9778				

Information Needed for Database and AIRS
No required information is missing.

Regulated Pollutants

PM10	Particulate Matter < 10 um	77.120 Lbs/Hr
PM10	Particulate Matter < 10 um	121.790 TPY
PT	Total Particulate Matter	197.870 Lbs/Hr
PT	Total Particulate Matter	322.160 TPY

Summary from this Permit 13-0119D

Air Programs	Applicable Regulations
NSPS	05 13 16 30 60 Y
TITLE V	

Fee Program	Fee	Application Type
8K	$2,000.00	MODIFICATION

Activity Dates

APPLICATION RECIEVED	08/17/2016	
APPLICANT PUBLISHED LEGAL AD	08/17/2016	The Barbour Democrat
APPLICATION FEE PAID	08/18/2016	$2,000
ASSIGNED DATE	08/18/2016	
ADDITIONAL INFO RECEIVED	09/01/2016	affidavit of publ.
APPLICATION INCOMPLETE	10/21/2016	
ADDITIONAL INFO RECEIVED	11/01/2016	response
APPLICATION INCOMPLETE	11/18/2016	
ADDITIONAL INFO RECEIVED	12/16/2016	response
APPLICATION DEEMED COMPLETE	02/10/2017	

Notes from Database
Permit MM Note: Modification to do the following: add radial stacking belt conveyor BC-20; add clean coal belt conveyor BC-21 and open storage pile OS-08 to be fed by the new belt plow on existing belt conveyor BC-6; declare refuse belt conveyors BC-10 and BC-11 inactive; remove refuse belt conveyor BC-12; relocate refuse belt conveyor BC-13 and open storage pile OS-3 to the clean coal conveying system to be fed by the new belt plow on existing belt conveyor BC-6 (if BC-13 and OS-3 are not relocated, then they will be removed from the facility); and increase the size of the existing open storage piles OS-1 through OS-7.

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Please note, this information sheet is not a substitute for file research and is limited to data entered into the AIRTRAX database.

Company ID: 001-00005
Company: Wolf Run Mining LLC
Printed: 04/11/2017
Engineer: Roberts, Dan

INTERNAL PERMITTING DOCUMENT TRACKING MANIFEST

Company Name Wolf Run Mining Company - Sentinel Prep Plant

Permitting Action Number R13-0119D Total Days _____ DAQ Days _____

Permitting Action:

- ○ Permit Determination
- ○ General Permit
- ○ Administrative Update
- ○ Temporary
- ○ Relocation
- ○ Construction
- ⊗ Modification
- ○ PSD (Rule 14)
- ○ NNSR (Rule 19)

Documents Attached:

- ⊗ Engineering Evaluation/Memo
- ⊗ Draft Permit
- ⊗ Notice
- ○ Denial
- ○ Final Permit/General Permit Registration
- ⊗ Completed Database Sheet
- ○ Withdrawal
- ○ Letter
- ○ Other *(specify)* I.D. No. 001-00005 Permit R13-0119D
  Company Wolf Run Mining Company
  Facility Sentinel Prep Plant
  Initials DRR

Date	From	To	Action Requested
3/22/17	Dan	Bev	Please review and comment. I am requesting permission to go to notice.
3/31	Bev	Dan	Ok to notice

NOTE: Retain a copy of this manifest for your records when transmitting your document(s).

NON-CONFIDENTIAL

Roberts, Daniel P

From:	Roberts, Daniel P
Sent:	Friday, February 10, 2017 8:58 AM
To:	Nair, Greg (GNair@archcoal.com)
Cc:	McKeone, Beverly D
Subject:	WV DAQ NSR Permit Application Complete for Wolf Run Mining Company - Sentinel Preparation Plant

RE: Application Status: Complete
Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application R13-0119D
Plant ID No. 001-00005

Mr. Nair,

Your application for a modification permit for a wet wash coal preparation plant was received by this Division on August 17, 2016 and assigned to the writer for review. On August 17, 2016, the applicant published a Class I legal advertisement in *The Barbour Democrat*. On September 1, 2016, the DAQ received an original affidavit of publication. On October 21, 2016, the DAQ deemed the application to be incomplete and requested additional information and corrections. After further correspondence, on December 16, 2016, the DAQ received additional information and revised application pages. Upon further review of said application and additional information received, it has been determined that the application is complete and, therefore, the statutory review period commenced on February 10, 2017.

In the case of this application, the agency believes it will take approximately 45 days to make a final permit determination.

This determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit determination.

Should you have any questions, please contact Dan Roberts at (304) 926-0499 ext. 1210 or reply to this email.

I.D. No. 001-00005 Reg. R13-01190
Company Wolf Run Mining Company
Facility Sentinel Prep Plant 6
Initials OPR

Roberts, Daniel P

From: Nair, Greg <GNair@archcoal.com>
Sent: Thursday, January 5, 2017 2:06 PM
To: Roberts, Daniel P
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Good Afternoon Dan,

Just thought I would drop a note and see how the review is coming along on the modification for Sentinel.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Wednesday, December 14, 2016 8:16 AM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. Sorry, I just missed your email yesterday afternoon. Everything looks good. Go with it.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Tuesday, December 13, 2016 4:11 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Disregard the earlier email. Here is the corrected version. Does this look okay?

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning

NON-CONFIDENTIAL

Greg Nair
Manager Surface Mine Planning
(304)265-9778 Direct
(304)290-3202 Mobile

gnair@archcoal.com

December 14, 2016

Mr. Daniel Roberts
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304

Re: Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application R13-0119D
Plant ID No. 001-00005

Dear Mr. Roberts:

Wolf Run Mining Company's application for a modification permit for a wet wash coal preparation plant was received by your Division on August 17, 2016 and assigned to you for review. Wolf Run Mining Company placed a Class I legal advertisement in The Barbour Democrat on August 17, 2016. The DAQ received original affidavit of publication on September 1, 2016. In an email dated October 21, 2016, the DAQ deemed the application to be incomplete. On November 1, 2016, the DAQ received a response with corrected application pages. Wolf Run Mining Company received an email on November 18 from DAQ with additional comments. This letter shall address those items that were deemed incomplete. Therefore, I offer the following comments based on your review:

1. On Attachment F – Process Flow Diagram, the diagram pictures refuse conveyor BC-11 transferring refuse onto clean coal conveyor BC-19. BC-19 is supposed to be fed clean coal from conveyor BC-6. Please make corrections as necessary.

   Wolf Run Response - On Attachment F – Process Flow Diagram, the diagram has been revised to reflect the current configuration. BC-19 does feed the clean coal from conveyor BC-6.

   DAQ Comment - Also, where does the refuse go after belt conveyor BC-11 now that belt conveyor BC-12 has been deleted? Also, where does the refuse go after belt conveyor BC-11 now that belt conveyor BC-12 has been deleted?

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Wolf Run Response - The circuit that used to handle the refuse after Belt Conveyor BC-11. These have been identified as IDLE as we discussed..

2. On page 2 of Attachment G – Process Description, paragraphs 5-9 still include belt conveyor BC-12 and belt conveyor BC-13 and Open storage pile OS-7 which were relocated to the clean coal circuit. Please make corrections as necessary. In paragraph 4, please expand and describe where the refuse goes after belt conveyor BC-11. The Process Description should be an written description of the Process Flow Diagram and the history of past changes is not needed. Please just included the up to date information and proposed changes.

Wolf Run Response – Attachment G – Process Description has been revised.

3. It appears that 360 TPH and 400,000 TPY exit crusher CR-2 onto conveyor BC-15. Therefore, the following changes need to be made:

   - On the Equipment Table and Conveying Affected Source Sheet, change the maximum capacity of BC-15 from 800,000 TPY to 400,000 TPY.
   - On Attachment N – Emission Calculations, change the maximum transfer rate for transfer point TP-35 from 800,000 TPY to 400,000 TPY.

Wolf Run Response – On the Equipment Table and Conveying Affected Source Sheet, I have changed the maximum capacity of BC-15 from 800,000 TPY to 400,000 TPY.

On Attachment N – Emissions Calculations, I have changed the maximum transfer rate for transfer point TP-35 from 800,000 TPY to 400,000 TPY.

4. On the Equipment Table, change the references for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3, respectively.

Wolf Run Response – On the Equipment Table, I have changed the references for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3.

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5. On Attachment N – Emissions Calculations in Section 2, change the description of transfer point TP-23 from BC-11 to BC-19 to whatever is appropriate now. Change the description of transfer point TP-36 to delete the reference to SS-1. Change the description of transfer point TP-41 to delete the reference to SS-2. Transfer point TP-53 from BC-13 to OS-3 lists a control device of SW-WS (water sprays), but a control efficiency of zero. It appears that the control device should be changed to N (none).

Wolf Run Response – Attachment N – Emissions Calculations in Section 2, I have changed the description of transfer point TP-23 from BC-11 to BC-19 to what is appropriate now. I have changed the description of transfer point TP-36 to delete the reference to SS-1. I have changed the description of transfer point TP-41 to delete the reference to SS-2. Transfer point TP-53 from BC-13 to OS-3 listed a control device of SW-WS (water sprays), but a control efficiency of zero. I have changed the control device to N (none).

6. On Attachment N – Emissions Calculations in Section 3, change the stockpile base area for OS-3 from 62,500 ft2 to 46,875 ft2.

Wolf Run Response – On Attachment N – Emissions Calculations in Section 3, I have changed the stockpile base area for OS-3 from 62,500 ft2 to 46,875 ft2.

I have addressed the deficiencies in writing within the fifteen (15) days of the receipt of the email. I am submitting a copy of the comments electronically via email and am mailing the required one copy.

If you have any additional comments or need any additional information please do not hesitate to contact me.

Sincerely,

Greg Nair
Manager Surface Mine Planning

Arch Coal, Inc.
Eastern Operations
100 Tygart Drive,
Grafton, West Virginia 26354
www.archcoal.com

ATTACHMENT G
PROCESS DESCRIPTION

Deep Mine Raw Coal Circuit

- Raw coal exits the mine by a 54" belt conveyor (BC-1) which is protected by a partial enclosure (TC-PE1).
- Belt Conveyor 1 goes through transfer point (TP-1) to Double Roll Crusher (CR-1)
- From (CR-1) coal will go through transfer point 2 (TP-2) to Double Deck Screen (S-1), full enclosure (CS-FE1) protects structures from TP-1 to S-1.
- From S-1 the coal processes through transfer point 3 (TP-3) also protected by CS-FE1 to 54" belt conveyor 2 (BC-2) protected by partial enclosure 2 (TC-PE2).
- The raw coal than passes through transfer point 4 (TP-4) protected by full enclosure 2 (CS-FE2) to double deck screen 2 (S-2) onto double deck screen 3 (S-3) through transfer point 4A (TP-4A).
- Sized coal leaving double deck screen 3 passes through transfer point 5 (TP-5) also protected by full enclosure 2 (CS-FE2) to 48" belt conveyor 3 (BC-3) protected by partial enclosure (TC-PE3).
- The sized coal will then pass through transfer point 6 (TP-6) to stacking tube 1 (ST-1) and stockpile (OS-1) protected by (SL-FE35) and (WS-SW1).
- The sized coal will enter an underground feeder via dozer through transfer point 7 (TP-7) which is protected by (LO-UC1).
- The sized coal will exit the underground feeder through transfer point 8 (TP-8) protected by full enclosure 4 (TC-FE4) to 30" belt conveyor 4 (BC-4) protected by partial enclosure 4 (TC-PE4).
- Sized coal will exit belt conveyor 4 through transfer point 9 (TP-9) inside the preparation plant, protected by full enclosure 5 (TC-FE5).

ATTACHMENT G
PROCESS DESCRIPTION

Trucked Raw Coal Circuit

- Raw coal will be trucked to a truck dump and unloaded onto stockpile (OS-4) at transfer point 32 (TP-32).
- At transfer point 33 (TP-33) raw coal will be transferred from (OS-4) by an endloader. The endloader will take the raw coal to crusher (CR-2) which is protected by (CS-PE34) at transfer point 34 (TP-34) which is also protected by water (SW-WS9).
- From crusher (CR-2) refuse which is greater than 2 inches will enter onto belt conveyor 15 (BC-15) which is protected by partial enclosure (TC-PE20) at transfer point 35 (TP-35).
- From belt conveyor 15 (BC-15) refuse will enter onto stockpile (OS-5) at transfer point 36 (TP-36).
- An endloader will remove the refuse from stockpile (OS-5) at transfer point 37 (TP-37). The loader will then place the refuse in a truck at transfer point 38 (TP-38). The truck will then haul the material to the refuse pile and unload onto the refuse pile at transfer point 39 (TP-39).
- At transfer point 40 (TP-40), protected by partial enclosure (TC-PE21) sized coal will exit crusher (CR-2) and enter onto belt conveyer (BC-16).
- Belt conveyor (BC-16) will transfer sized coal onto stockpile (OS-6) at transfer point 41 (TP-41). The sized coal will be transferred from stockpile (OS-6) to stockpile (OS-1) by dozer at transfer point 42 (TP-42).
- At stockpile (OS-1) the coal will enter the underground feeder and proceed through the preparation plant as discussed earlier in the process description. Once the clean coal exits the preparation plant onto belt conveyor (BC-5) to belt conveyor (BC-19).

ATTACHMENT G
PROCESS DESCRIPTION

Clean Coal Circuit

- Coal will exit the preparation plant at transfer point 10 (TP-10) (TC-FE5) and enter on 36" belt conveyor 5 (BC-5) which is protected by partial enclosure 5 (TC-PE5).
- Belt conveyor 5 (BC-5) will transfer to 36" belt conveyor 6 (BC-6) protected by partial enclosure 6 (TC-PE6) through transfer point 11 (TP-11) protected by full enclosure 6 (TC-FE6).
- The coal will then pass through transfer point 49 (TP-49).
- A plow (flop gate) will be installed in BC-6 at transfer point 49 (TP-49) which will be protected by a partial enclosure 49 (TC-PE49).
- The coal will then pass through transfer point 12 (TP-12) to stacking tube (ST-2) and stockpile (OS-2) protected by (SL-FE36).
- The coal will enter an underground feeder via dozer, (LO-UC2), transfer point 13 (TP-13), protected by (LO-UC2).
- The coal will exit the underground feeder through transfer point 14 (TP-14) protected by full enclosure 8 (TC-FE8) to 60" belt conveyor 7 (BC-7) protected by partial enclosure 7 (TC-PE7).
- Coal will exit belt conveyor 7 through transfer point 15 (TP-15) to Bin 1 (BS-1) protected by full enclosure 9 (SL-FE9).
- The coal will exit BS-1 to the railroad cars through transfer point 16 (TP-16) protected by (LR-PE16).
- Belt conveyor (BC-6) will transfer coal to Belt conveyor (BC-13) to new stacking tube (ST-3) which will transfer clean coal at transfer point 53 (TP-53) to stockpile (OS-3).
- The coal will enter an underground feeder via dozer, (LO-UC4) transfer point 26 (TP-26), protected by (LO-UC4).
- Coal will flow through the underground tunnel until it enters onto belt conveyor (BC-7) which is protected by partial enclosure (TC-PE7) at transfer point (TP-14) which is protected by full enclosure (TC-FE8).
- Belt conveyor (BC-7) will transfer coal into Bin 1 (BS-1) at transfer point (TP-15) which is protected by full enclosure (SL-FE9).
- From (BS-1) all coal will enter onto the rail at transfer point (TP-16) which is protected by (LR-TC1).
- The plow (flop gate) to be installed in BC-6 at transfer point 49 (TP-49) will be protected by partial enclosure 49 (TC-PE49). The plow at TP-49 will divert the material into a chute off the side of BC-6 at TP-49, then depending on which way the flop gate is positioned at TP-49 will determine whether the material goes to BC-13 and the new stacking tube (ST-3) or to BC-21 (the new radial stacker) to OS-8.
- Belt conveyor (BC-21) which is a radial stacker will transfer coal to stockpile (OS-8) at transfer point 50 (TP-50).
- From stockpile OS-8, clean coal will be removed by a loader at transfer point 52 (TP-52), the loader will load trucks at transfer point 51 (TP-51).
- The middlings will exit the plant on belt conveyor 19 (BC-19) and will transfer middlings to belt conveyor (BC-17) at transfer point 43 (TP-43) which is protected by partial enclosure (TC-PE22).
- At transfer point 44 (TP-44) coals will transfer to belt conveyor (BC-18) which is protected by partial enclosure (TC-PE23).

ATTACHMENT G
PROCESS DESCRIPTION

Clean Coal Circuit cont.

- Belt conveyor (BC-18) will transfer the middlings to Radial Stacker at transfer point (TP-48 which is protected by partial enclosure (TC-PE48).
- Radial Stacker (BC-20) will transfer middlings to stockpile (OS-7) at transfer point 45 (TP-45).
- From stockpile (OS-7) coal will be pushed to an underground feeder by dozer at transfer point 46 (TP-46) which is protected by (LO-UC3).
- Coal will flow through the underground tunnel until it enters onto belt conveyor (BC-7) which is protected by partial enclosure (TC-PE7) at transfer point (TP-14) which is protected by full enclosure (TC-FE8).
- Belt conveyor (BC-7) will transfer coal into Bin 1 (BS-1) at transfer point (TP-15) which is protected by full enclosure (SL-FE9).
- From (BS-1) all coal will enter onto the rail at transfer point (TP-16) which is protected by (LR-TC1).

ATTACHMENT G
PROCESS DESCRIPTION

Refuse Circuit

- At full enclosure 2 (FE-2) refuse will exit double screen (S-3) through transfer point 19 (TP-19) protected by (CS-FE2) to 42" belt conveyor 9 (BC-9) protected by partial enclosure 10 (TC-PE10).
- From belt conveyor 9 refuse will enter onto 36" belt conveyor 8 (BC-8) protected by partial enclosure 9 (TC-PE9) through transfer point (TP-20) protected by partial enclosure 11 (TC-PE11).
- Also entering onto belt conveyor 8 (BC-8) is refuse, exiting the preparation plant at transfer point 17 (TP-17) protected by full enclosure 5 (TC-FE5).
- All refuse will enter Bin 2 (BS-2), protected by full enclosure 10 (SW-FE10) from belt conveyor 8 (BC-8) through transfer point 18 (TP-18) also protected by full enclosure 10 (SW-FE10).
- From (BS-2) refuse will exit by two different transfer points; the main process will have the refuse exiting BS-2 pass through transfer point 28 (TP-28) protected by full enclosure 10 (SW-FE10) to 36" belt conveyor 14 (BC-14) protected by partial enclosure 19 (TC-PE19).
- At bin 2 (BS-2) part of the refuse from the preparation plant will enter into trucks at transfer point 47 (TP-47) protected by (UD-PE47) to be hauled to the refuse area which the unpaved access road will be protected by (HR-WS12).
- From belt conveyor 14 (BC-14) refuse will enter Bin 3 (BS-3) through transfer point 29 (TP-29) protected by full enclosure (SL-FE11).
- Refuse will discharge from BS-3 to a pan by transfer point 30 (TP-30) protected by (LR-PE30). The pan will then spread the refuse to the refuse pile through transfer point 31 (TP-31).
- The secondary process proposed the refuse exiting BS-2 onto belt conveyor 10 at transfer point 22 (TP-22) protected by partial enclosure 13 (TC-PE13) and enter onto 24" belt conveyor 11 (BC-11) protected by partial enclosure 13 (TC-PE13).
- Refuse will then pass through transfer point 23 (TP-23) protected by partial enclosure 14 (TC-PE14) to 24" belt conveyor 12 (BC-12) protected by partial enclosure 15 (TC-PE15).
- Belt conveyor 12 will exit refuse through transfer point 24 (TP-24) protected by partial enclosure 16 (TC-PE16) onto 24" belt conveyor 13 (BC-13) protected by partial enclosure (TC-PE17) attached to a radial stacker protected by (Sl-CS1).
- Refuse will then enter onto stockpile (OS-3) through transfer point 25 (TP-25).
- From stockpile OS-3, refuse will be removed by a loader at transfer point 26 (TP-26), the loader will load trucks at transfer point 27 (TP-27).
- The trucks will leave the site via unpaved and paved access roads protected by water (HR-WS8).
- The secondary process identified above is being revised in this modification. It should be noted that BC-10 and BC-11 are Idle. It should also be noted that BC-12 has been removed and the remaining from TP-23 to end of circuit is either being removed or relocated to the clean coal circuit.

ATTACHMENT G
PROCESS DESCRIPTION

Stockpile bases for previously approved stockpile area will be enlarged to 37,500 square feet or 50,000 tons maximum. Two stockpiles, OS-3 and OS-8, will be enlarged to a base of 46,875 square feet or 62,500 tons maximum.

EQUIPMENT TABLE

Equipment ID No.	Description	Year Installed	Maximum Capacity		Control Equipment
			TPH	TPY	
CR-1	Double Roll Crusher	1991*	1350	3,600,000	FE-1
CR-2	Double Roll Crusher	2011	600	3,600,000	CS-PE34
S-1	Double Deck Screen	1991*	1350	3,600,000	FE-1
S-2	Double Deck Vibrating Screen	1991*	1350	3,600,000	FE-2
S-3	Double Deck Vibrating Screen	1991*	1350	3,600,000	FE-2
Belts					
BC-1	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-1
BC-2	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-2
BC-3	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-3
BC-4	Belt Conveyor - Raw Coal	1991*	600	4,400,000	PE-4
BC-5	Belt Conveyor - Clean Coal	1991*	800	4,400,000	PE-5
BC-6	Belt Conveyor - Clean Coal	1991*	800	3,600,000	PE-6
BC-7	Belt Conveyor - Clean Coal	1991*	2500	4,400,000	PE-7
BC-8	Belt Conveyor - Refuse	1991*	400	2,280,000	PE-9
BC-9	Belt Conveyor - Refuse	2008	244	300,000	PE-10
BC-10 (IDLE)	Belt Conveyor - Refuse	2008	244	300,000	PE-12
BC-11 (IDLE)	Belt Conveyor - Refuse	2008	244	300,000	PE-13
BC-13	Belt Conveyor – Clean Coal	2016**	360	800,000	PE-17
BC-14	Belt Conveyor - Refuse	1991*	400	1,980,000	PE-19
BC-15	Belt Conveyor - Sized Coal	2011	360	400,000	PE-20
BC-16	Belt Conveyor - Sized Coal	2011	360	800,000	PE-21
BC-17	Belt Conveyor - Clean Coal	2011	360	800,000	PE-22
BC-18	Belt Conveyor - Clean Coal	2011	360	800,000	PE-23
BC-19	Belt Conveyor - Clean Coal	2011	360	800,000	PE-24
BC-20	Belt Conveyor - Clean Coal	2016**	360	800,000	PE-48
BC-21	Belt Conveyor - Clean Coal	2016**	360	800,000	PE-50

EQUIPMENT TABLE

Storage	Description	Max. Base Area (sq. ft.)	Max. Storage Capacity (tons)	Max. Capacity TPY	Control Equipment
OS-1	Sized Coal Stockpile	37,500	50,000	4,400,000	WS-1
OS-2	Clean Coal Stockpile	37,500	50,000	3,600,000	WS-2
OS-3	Clean Coal Stockpile	46,875	62,500	800,000	WS-3
BS-1	Clean Coal Bin	600	161	4,400,000	FE-9
BS-2	Refuse Coal Bin	600	161	2,280,000	FE-10
BS-3	Refuse Coal Bin	600	161	1,980,000	FE-11
OS-4	Raw Coal	37,500	50,000	800,000	WS-9
OS-5	Sized Coal Stockpile	37,500	50,000	400,000	WS-10
OS-6	Sized Coal Stockpile	37,500	50,000	800,000	WS-11
OS-7	Sized Coal Stockpile	37,500	50,000	800,000	TC-WS15
OS-8	Clean Coal Stockpile	46,875	62,500	800,000	TC-WS16

* Notes when permit was acquired by current owner, not when equipment may have been initially installed.
** Notes when equipment will be installed and/or modified, if permit approved.

CONVEYING AFFECTED SOURCE SHEET

Source Identification Number[1]	Date of Construction, Reconstruction, or Modification (Month/Year)[2]	Type of Material Handled[3]	Size of Material Handled[4]	Maximum Material Transfer Rate[5]		Average Moisture Content (%)[6]	Control Device[7]
				tons/hour	tons/year		
BC-1	11/11	RC	Raw – 2" x 0	1350	3,600,000	5 %	PE-1
BC-2	11/11	SC	Raw – 2" x 0	1350	3,600,000	5 %	PE-2
BC-3	11/11	SC	¾' x 0	1350	3,600,000	5 %	PE-3
BC-4	11/11	SC	¾' x 0	600	4,400,000	5 %	PE-4
BC-5	11/11	CC	¾' x 0	800	4,400,000	5 %	PE-5
BC-6	11/11	CC	¾' x 0	800	3,600,000	5 %	PE-6
BC-7	11/11	CC	¾' x 0	2500	4,400,000	5 %	PE-7
BC-8	11/11	R	+ ¾'	400	2,280,000	5 %	PE-9
BC-9	06/08	R	+ ¾'	244	300,000	5 %	PE-10
BC-10 (IDLE)	06/08	R	+ ¾'	244	300,000	5 %	PE-12
BC-11 (IDLE)	06/08	R	+ ¾'	244	300,000	5 %	PE-13
BC-13	11/11	CC	¾' x 0	360	800,000	5 %	PE-17
BC-14	11/11	R	+ ¾'	400	1,980,000	5 %	PE-19
BC-15	11/11	R	+ ¾'	360	400,000	5 %	PE-20
BC-16	11/11	SC	¾' x 0	360	800,000	5 %	PE-21
BC-17	11/11	CC	¾' x 0	360	800,000	5 %	PE-22
BC-18	11/11	CC	¾' x 0	360	800,000	5 %	PE-23
BC-19	11/11	CC	¾' x 0	360	800,000	5 %	PE-24

1. Enter the appropriate Source Identification Number for each conveyor using the following codes. For example, multiple belt conveyors should be designated BC-1, BC-2, BC-3 etc. Transfer points are considered emission points, not sources, and should not be included in the *Conveying Affected Source Sheet.* Transfer Point Identification Numbers shall be assigned in the *Emission Calculation Sheet.*

BC	Belt Conveyor	BE	Bucket Elevator	DL	Drag-link Conveyor
PS	Pneumatic System	SC	Screw Conveyor	VC	Vibrating Conveyor
OT	Other				

2. Enter the date that each crusher and screen was constructed, reconstructed, or modified.
3. Enter the type of material being handled - Raw Coal (RC) Sized Coal (SC) Clean Coal (CC) Refuse (R) Other (O)
4. Enter the nominal size of the material being conveyed (e.g. clean coal - ¾" x 0). If more than one material is handled by the listed conveyor, list each material and enter the appropriate data for each material.
5. Enter the maximum material transfer rate for each conveyor in tons per hour and tons per year.
6. Enter the average percent moisture content of the conveyed material.
7. Enter the control device for the conveyor. PE - Partial Enclosure (example 3/4 hoop), FE - Full Enclosure, N – None

CONVEYING AFFECTED SOURCE SHEET

Source Identification Number[1]	Date of Construction, Reconstruction, or Modification (Month/Year)[2]	Type of Material Handled[3]	Size of Material Handled[4]	Maximum Material Transfer Rate[5]		Average Moisture Content (%)[6]	Control Device[7]
				tons/hour	tons/year		
BC-20	11/16	CC	2" x 0	360	800,000	5 %	PE-48
BC-21	11/16	CC	2" x 0	360	800,000	5 %	PE-49

1. Enter the appropriate Source Identification Number for each conveyor using the following codes. For example, multiple belt conveyors should be designated BC-1, BC-2, BC-3 etc. Transfer points are considered emission points, not sources, and should not be included in the *Conveying Affected Source Sheet.* Transfer Point Identification Numbers shall be assigned in the *Emission Calculation Sheet.*

   BC Belt Conveyor BE Bucket Elevator DL Drag-link Conveyor
   PS Pneumatic System SC Screw Conveyor VC Vibrating Conveyor
   OT Other

2. Enter the date that each crusher and screen was constructed, reconstructed, or modified.
3. Enter the type of material being handled - Raw Coal (RC) Sized Coal (SC) Clean Coal (CC) Refuse (R) Other (O)
4. Enter the nominal size of the material being conveyed (e.g. clean coal - ¾" x 0). If more than one material is handled by the listed conveyor, list each material and enter the appropriate data for each material.
5. Enter the maximum material transfer rate for each conveyor in tons per hour and tons per year.
6. Enter the average percent moisture content of the conveyed material.
7. Enter the control device for the conveyor. PE - Partial Enclosure (example 3/4 hoop), FE - Full Enclosure, N – None

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/01/2011	BC-1	Belt Conveyor	TC-PE1	PE	TP-1	N/A
Modification	11/01/2011	CR-1	Crusher	CS-FE1	FE	TP-2	N/A
Modification	11/01/2011	S-1	Double Deck Screen	CS-FE1	FE	TP-3	N/A
Modification	11/01/2011	BC-2	Belt Conveyor	TC-PE2	PE	TP-4	N/A
Modification	11/01/2011	S-2	Double Deck Screen	CS-FE2	FE	TP-4	N/A
Modification	11/01/2011	S-3	Double Deck Screen	CS-FE2	FE	TP-5	N/A
Modification	11/01/2011	BC-3	Belt Conveyor	TC-PE3	PE	TP-6	N/A
Modification	11/01/2011	ST-1	Stacking Tube	SL-FE35	FE	TP-6	N/A
Modification	11/01/2011	OT-1	Dozer To Feeder	LO-UC1	CS	TP-7	N/A
Modification	11/01/2011	BC-4	Belt Conveyor	TC-PE4	PE	TP-8	N/A
Modification	11/01/2011	BC-4	Belt Conveyor to Prep Plant	TC-FE5	FE	TP-9	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

[1] Number as 1s, 2s, 3s ... or other appropriate designation. Must match process flow diagram.

[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/01/2011	BC-5	Prep Plant to Belt Conveyor	TC-FE5	FE	TP-10	N/A
Modification	11/01/2011	BC-5	Belt Conveyor	TC-FE6	FE	TP-11	N/A
Modification	11/01/2011	BC-6	Belt Conveyor	TC-PE6	PE	TP-12	N/A
Modification	11/01/2011	ST-2	Stacking Tube	SL-FE36	FE	TP-12	N/A
Modification	11/01/2011	LO-UC2	Dozer to Feeder	LO-UC2	UC	TP-13	N/A
Modification	11/01/2011	BC-7	Belt Conveyor	TC-PE7	PE	TP-14	N/A
Modification	11/01/2011	BC-7	Belt Conveyor to Bin 1	SL-FE9	FE	TP-15	N/A
Modification	11/01/2011	TP-16	Bin 1 to Rail	LR-PE16	PE	TP-16	N/A
Modification	11/01/2011	BC-8	Prep Plant to BC	TC-FE5	FE	TP-17	N/A
Modification	11/01/2011	BC-8	Belt Conveyor	TC-PE9	PE	TP-18	N/A
Modification	11/01/2011	BC-8	Belt Conveyor to Bin 2	SL-FE10	FE	TP-18	N/A

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[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/01/2011	TP-28	Bin 2 to Belt Conveyor	LO-UC4	UC	TP-28	N/A
Modification	11/01/2011	BC-14	Belt Conveyor	TC-PE19	PE	TP-29	N/A
Modification	11/01/2011	BC-14	Belt Conveyor to Bin 3	SL-FE11	FE	TP-29	N/A
Modification	11/01/2011	TP-30	Bin 3 to Pan	LR-PE30	PE	TP-30	N/A
Modification	11/01/2011	TP-31	Pan to Refuse Pile	N	None	TP-31	N/A
Modification	06/30/2008	BC-9	Double Deck Screen 3 to Belt Conveyor	CS-FE2	FE	TP-19	N/A
Modification	06/30/2008	BC-9	Belt Conveyor	TC-PE10	PE	TP-20	N/A
Modification	06/30/2008	BC-10	Bin 2 to Belt Conveyor – IDLE	LO-UC4	UC	TP-21	N/A
Modification	06/30/2008	BC-10	Belt Conveyor – IDLE	TC-PE12	PE	TP-22	N/A
Modification	06/30/2008	BC-11	Belt Conveyor - IDLE	TC-PE13	PE	TP-23	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

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[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	06/30/2008	BC-13	Belt Conveyor	TC-PE17	PE	TP-25	N/A
Modification	06/30/2008	PE-18	Radial Stacker to OS-3	N	None	TP-25	N/A
Modification	11/22/2016	TP-26	OS-3 to Loader	N	None	TP-26	N/A
Modification	11/01/2011	TP-27	Loader to Truck	N	None	TP-27	N/A
Modification	11/01/2011	TP-32	Truck Dump to OS-4	N	None	TP-32	N/A
Modification	11/01/2011	TP-33	OS-4 to Loader	N	None	TP-33	N/A
Modification	11/01/2011	TP-34	Loader to CR-2	CS-PE34	PW	TP-34	N/A
Modification	11/01/2011	TP-35	CR-2 to Belt Conveyor	TC-PE20	PE	TP-35	N/A
Modification	11/01/2011	BC-15	Belt Conveyor	TC-PE20	PE	TP-35	N/A
Modification	11/01/2011	TP-36	Belt Conveyor to OS-5	N	None	TP-36	N/A
Modification	11/01/2011	TP-37	OS-5 to Loader	N	None	TP-37	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

[1] Number as 1s, 2s, 3s ... or other appropriate designation. Must match process flow diagram.

[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/01/2011	TP-38	Loader to Truck	N	None	TP-38	N/A
Modification	11/01/2011	TP-39	Truck to Refuse Pile	N	None	TP-39	N/A
Modification	11/01/2011	TP-40	CR-2 to Belt Conveyor	TC-PE21	PE	TP-40	N/A
Modification	11/01/2011	BC-16	Belt Conveyor	TC-PE21	PE	TP-40	N/A
Modification	11/01/2011	TP-41	Belt Conveyor to OS-6	N	None	TP-41	N/A
Modification	11/01/2011	TP-42	OS-6 to OS-1 by Dozer	N	None	TP-42	N/A
Modification	11/22/2016	BC-19	Prep Plant to Belt Conveyor	TC-PE24	PE	TP-43	N/A
Modification	11/01/2011	TP-43	Belt Conveyor 19 to Belt Conveyor 17	TC-PE22	PE	TP-43	N/A
Modification	11/22/2016	BC-17	Belt Conveyor	TC-PE22	PE	TP-44	N/A
Modification	11/22/2016	TP-44	Belt Conveyor 17 to Belt Conveyor 18	TC-PE23	PE	TP-44	N/A
Modification	11/22/2016	BC-18	Belt Conveyor	TC-PE23	PE	TP-48	N/A
Modification	11/22/2016	TP-48	BC-18 to Radial Stacker	TC-PE48	PE	TP-48	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

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[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

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[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/22/2016	BC-20	Radial Stacker	TC-PE48	PE	TP-48	N/A
Modification	11/22/2016	TP-45	Belt Conveyor to OS-7	N	None	TP-45	N/A
Modification	11/22/2016	TP-46	OS-7 to Underground Feeder	LO-UC3	UC	TP-46	N/A
Modification	11/01/2011	TP-47	Bin 2 to Truck	UD-PE47	PW	TP-47	N/A
Modification	11/22/2016	TP-49	BC-6 to BC-21	TC-PE49	PE	TP-49	N/A
Modification	11/22/2016	BC-21	Radial Stacker	TC-PE50	PE	TP-50	N/A
Modification	11/22/2016	TP-50	BC-21 to OS-8	TC-PE16	PE	TP-50	N/A
Modification	11/22/2016	TP-51	OS-8 to Loader	N	None	TP-51	N/A
Modification	11/22/2016	TP-52	Loader to Truck	N	None	TP-51	N/A
Modification	11/22/2016	TP-49	BC-6 to BC-13	TC-PE49	PE	TP-49	N/A
Modification	11/22/2016	ST-3	Stacking Tube	SL-FE36	FE	TP-53	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

[1] Number as 1s, 2s, 3s ... or other appropriate designation. Must match process flow diagram.

[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ... or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EMISSIONS SUMMARY

Name of applicant: Wolf Run Mining Company
Name of plant: Sentinel Mine

Particulate Matter or PM (for 45CSR14 Major Source Determination)

	Uncontrolled PM		Controlled PM	
	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS				
Stockpile Emissions	2.16	9.46	0.54	2.35
Unpaved Haulroad Emissions	303.60	565.87	91.08	169.76
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	**305.76**	**575.32**	**91.62**	**172.11**
POINT SOURCE EMISSIONS				
Equipment Emissions	444.00	612.00	92.40	133.20
Transfer Point Emissions	38.45	52.35	13.85	16.85
Point Source Emissions Total*	**482.45**	**664.35**	**106.25**	**150.05**
Facility Emissions Total	**788.21**	**1,239.68**	**197.87**	**322.16**

*Note: Point Source Total Controlled PM TPY emissions is used for 45CSR14 Major Source determination (see below)

***Facility Potential to Emit (PTE) (Baseline Emissions) = 150.05**

(Based on Point Source Total controlled PM TPY emissions from above) **ENTER ON LINE 26 OF APPLICATION**

Particulate Matter under 10 microns, or PM-10 (for 45CSR30 Major Source Determination)

	Uncontrolled PM-10		Controlled PM-10	
	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS				
Stockpile Emissions	1.01	4.44	0.25	1.10
Unpaved Haulroad Emissions	89.61	167.02	26.88	50.11
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	**90.63**	**171.47**	**27.14**	**51.21**
POINT SOURCE EMISSIONS				
Equipment Emissions	208.68	287.64	43.43	62.60
Transfer Point Emissions	18.19	24.76	6.55	7.97
Point Source Emissions Total*	**226.87**	**312.40**	**49.98**	**70.57**
Facility Emissions Total	**317.49**	**483.87**	**77.12**	**121.79**

*Note: Point Source Total Controlled PM-10 TPY emissions is used for 45CSR30 Major Source determination

INPUTS

Include all information for each emission source and transfer point as listed in the permit application.

Name of applicant: Wolf Run Mining Company
Name of plant: Sentinel Mine

1. CRUSHING AND SCREENING (including all primary and secondary crushers and screens)

1a. PRIMARY CRUSHING

Primary Crusher ID Number	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %
CR-1	Double Roll Crusher	1,350	3,600,000	CS-PE1	80
CR-2	Double Roll Crusher	600	3,600,000	CS-PE34	50

1b. SECONDARY AND TERTIARY CRUSHING

Secondary & Tertiary Crusher ID	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %

1c. SCREENING

Secondary & Tertiary Crusher ID	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %
S-1	ROM Double Deck Screen	1,350	3,600,000	CS-PE1	80
S-2	ROM Double Deck Vibrating Screen	1,350	3,600,000	CS-PE2	80
S-3	ROM Double Deck Vibrating Screen	1,350	3,600,000	CS-PE2	80

2. TRANSFER POINTS (including all conveyor transfer points, equipment transfer points etc.)

		PM	PM-10
k =	Particle Size Multiplier (dimensionless)	0.74	0.35
U =	Mean Wind Speed (mph)	7	

Transfer Point ID No.	Transfer Point Description Include ID Numbers of all conveyors, crushers, screens, stockpiles, etc. involved	Material Moisture Content %	Maximum Transfer Rate TPH	Maximum Transfer Rate TPY	Control Device ID Number	Control Efficiency %
TP-1	BC-1 To CR-1	4	1,350	3,600,000	CS-FE1	80
TP-2	CR-1 To S-1	4	1,350	3,600,000	CS-FE1	80
TP-3	S-1 To BC-2	4	1,350	3,600,000	CS-FE1	80
TP-4	BC-2 To S-2	4	1,350	3,600,000	CS-FE2	80
TP-4A	S-2 To S-3	4	1,350	3,600,000	CS-FE2	80
TP-5	S-3 To BC-3	5	1,350	3,600,000	CS-FE2	80
TP-6	BC-3 To ST-1 (OS-1)	5	1,350	3,600,000	SL-FE35	80
TP-7	OS-1 To Feeder	5	600	4,400,000	LO-UC1	80
TP-8	Feeder To BC-4	5	600	4,400,000	TC-FE4	80
TP-9	BC-4 To Prep Plant	5	600	4,400,000	TC-FE5	80
TP-10	Prep Plant To BC-5	5	800	4,400,000	TC-FE5	80
TP-11	BC-5 To BC-6	5	800	4,400,000	TC-FE6	80
TP-12	BC-6 To ST-2 (OS-2)	5	800	3,600,000	SL-FE36	80
TP-13	OS-2 To Feeder	5	2,500	3,600,000	LO-UC2	80
TP-14	Feeder To BC-7	5	2,500	4,400,000	TC-FE8	80
TP-15	BC-7 To BS-1	5	2,500	4,400,000	SL-FE9	80
TP-16	BS-1 To Rail	5	2,500	4,400,000	LR-PE16	50
TP-17	Prep Plant To BC-8	5	400	1,980,000	TC-FE5	80
TP-18	BC-8 To BS-2	5	400	2,280,000	SL-FE10	80
TP-19	S-3 To BC-9	5	244	300,000	CS-FE2	80
TP-20	BC-9 To BC-8	5	244	300,000	TC-PE11	50
TP-21	BS-2 To BC-10	5	244	0	LO-UC4	80
TP-22	BC-10 To BC-11 (IDLE)	5	244	0	TC-PE13	50
TP-23	BC-11 To BC-12 IDLE)	5	244	0	TC-PE14	50
TP-26	Dozer to UG Feeder	5	360	800,000	N	0
TP-28	BS-2 To BC-14	5	400	1,980,000	LO-UC4	80
TP-29	BC-14 To BS-3	5	400	1,980,000	SL-FE11	80
TP-30	BS-3 To Pan	5	400	1,980,000	LR-PE30	50
TP-31	Pan To Refuse Pile	5	400	1,980,000	N	0
TP-32	TD-1 To OS-4	5	360	800,000	N	0
TP-33	OS-4 To Loader	5	360	800,000	N	0
TP-34	Loader To CR-2	5	360	800,000	CS-PE34	50
TP-35	CR-2 To BC-15	5	360	400,000	TC-PE20	50
TP-36	BC-15 To OS-5	5	360	400,000	N	0
TP-37	OS-5 To Loader	5	360	400,000	N	0
TP-38	Loader To Truck	5	360	400,000	N	0
TP-39	Truck To Refuse Pile	5	360	400,000	N	0
TP-40	CR-2 To BC-16	5	360	800,000	TC-PE21	50
TP-41	BC-16 To OS-6	5	360	800,000	N	0
TP-42	OS-6 To OS-1 by dozer	5	360	800,000	N	0
TP-43	BC-19 To BC-17	5	360	800,000	TC-PE22	50
TP-44	BC-17 To BC-18	5	360	800,000	TC-PE23	50
TP-45	BC-20 To OS-7	5	360	800,000	N	0
TP46	OS-7 To Feeder	5	360	800,000	LO-UC3	80
TP-47	BS-2 To Truck	5	150	400,000	UD-PE47	50
TP-48	BC-18 to Radial Stacker BC-20	5	360	800,000	TC-PE48	50
TP-49	BC-6 to Plow to either BC-13/BC-21	5	360	800,000	TC-PE49	50
TP-50	BC-21 to OS-8	5	360	800,000	TC-PE50	50
TP-51	OS-8 to Loader	5	360	800,000	N	0
TP-52	Loader to Truck	5	360	800,000	N	0
TP-53	BC-13 to OS-3	5	360	800,000	N	0

3. WIND EROSION OF STOCKPILES (including all stockpiles of raw coal, clean coal, coal refuse, etc.)

p =	number of days per year with precipitation >0.01 inch	146
f =	percentage of time that the unobstructed wind speed exceeds 12 mph at the mean pile height	20

Source ID No.	Stockpile Description	Silt Content of Material %	Stockpile base area Max. sqft	Control Device ID Number	Control Efficiency %
OS-1	Sized Coal Stockpile	5	37,500	SW-WS1	75
OS-2	Clean Coal Stockpile	5	37,500	SW-WS14	75
OS-3	Clean Coal Stockpile	5	46,875	SW-WS3	75
Bin 1	Clean Coal Bin	5	600	SW-FE9	100
Bin 2	Refuse Coal Bin	5	600	SW-FE10	100
Bin 3	Refuse Coal Bin	5	600	SW-FE11	100
OS-4	aw Coal From Truck Dun	5	37,500	SW-WS9	75
OS-5	Sized Coal Stockpile	5	37,500	SW-WS10	75
OS-6	Sized Coal Stockpile	5	37,500	SW-WS2	75
OS-7	Sized Coal Stockpile	5	37,500	SW-WS15	75
OS-8	Clean Coal Stockpile	5	46,875	SW-WS16	75

4. UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

s =	silt content of road surface material (%)	10
p =	number of days per year with precipitation >0.01 inch	146
M_{dry} =	surface material moisture content (%) - dry conditions	0.2

Item Number	Description	Number of wheels	Mean Vehicle Weight(tons)	Mean Vehicle Speed (mph)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1	Dozer For Sized Coal Transfer	2	32	3	0.04	97	######	HR-WS4	70
2	Dozer For Clean Coal Transfer	2	32	3	0.04	97	######	HR-WS5	70
3	Loader To Truck	4	32	3	0.04	30	######	HR-WS6	70
4	Pan To Spread Refuse	4	50	4	0.1	50	######	HR-WS7	70
5	Dozer For Sized Coal Transfer	2	32	3	0.04	97	######	HR-WS9	70
6	Loader To Truck	4	32	3	0.04	40	######	HR-WS1(	70
7	Dozer For Midlings To Feeder	2	32	3	0.04	48	46,875	HR-WS11	70
8	Truck To Refuse	18	25	10	0.1	20	40,000	S12 & HR	70
9									

5. INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

sL =	road surface silt loading, (g/ft^2)	70
P =	number of days per year with precipitation >0.01 inch	146

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1							
2							
3							
4							
5							
6							
7							
8							

1. Emissions From CRUSHING AND SCREENING

1a. Primary Crushing

Primary Crusher ID Number	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
CR-1	27.000	36.000	5.400	7.200	12.690	16.920	2.538	3.384
CR-2	12.000	36.000	6.000	18.000	5.640	16.920	2.820	8.460
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	39.000	72.000	11.400	25.200	18.330	33.840	5.358	11.844

1b. Secondary and Tertiary Crushing

Secondary & Tertiary Crusher ID	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1c. Screening

Screen ID Number	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
S-1	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
S-2	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
S-3	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	405.000	540.000	81.000	108.000	190.350	253.800	38.070	50.760

Crushing and Screening	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TOTAL	444.000	612.000	92.400	133.200	208.680	287.640	43.428	62.604

EMISSION FACTORS

source: Air Pollution Engineering Manual and References

(lb/ton of material throughput)

PM	
Primary Crushing	0.02
Tertiary Crushing	0.06
Screening	0.1

PM-10	
Primary Crushing	0.0094
Tertiary Crushing	0.0282
Screening	0.047

2. Emissions From TRANSFER POINTS

Transfer Point ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TP-1	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-2	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-3	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-4	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-4A	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-5	1.373	1.830	0.275	0.366	0.649	0.866	0.130	0.173
TP-6	1.373	1.830	0.275	0.366	0.649	0.866	0.130	0.173
TP-7	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-8	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-9	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-10	0.813	2.237	0.163	0.447	0.385	1.058	0.077	0.212
TP-11	0.813	2.237	0.163	0.447	0.385	1.058	0.077	0.212
TP-12	0.813	1.830	0.163	0.366	0.385	0.866	0.077	0.173
TP-13	2.542	1.830	0.508	0.366	1.202	0.866	0.240	0.173
TP-14	2.542	2.237	0.508	0.447	1.202	1.058	0.240	0.212
TP-15	2.542	2.237	0.508	0.447	1.202	1.058	0.240	0.212
TP-16	2.542	2.237	1.271	1.118	1.202	1.058	0.601	0.529
TP-17	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-18	0.407	1.159	0.081	0.232	0.192	0.548	0.038	0.110
TP-19	0.248	0.153	0.050	0.031	0.117	0.072	0.023	0.014
TP-20	0.248	0.153	0.124	0.076	0.117	0.072	0.059	0.036
TP-21	0.248	0.000	0.050	0.000	0.117	0.000	0.023	0.000
TP-22	0.248	0.000	0.124	0.000	0.117	0.000	0.059	0.000
TP-23	0.248	0.000	0.124	0.000	0.117	0.000	0.059	0.000
TP-26	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-28	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-29	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-30	0.407	1.007	0.203	0.503	0.192	0.476	0.096	0.238
TP-31	0.407	1.007	0.407	1.007	0.192	0.476	0.192	0.476
TP-32	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-33	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-34	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-35	0.366	0.203	0.183	0.102	0.173	0.096	0.087	0.048
TP-36	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-37	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-38	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-39	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-40	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-41	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-42	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-43	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-44	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-45	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP46	0.366	0.407	0.073	0.081	0.173	0.192	0.035	0.038
TP-47	0.153	0.203	0.076	0.102	0.072	0.096	0.036	0.048
TP-48	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-49	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-50	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-51	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-52	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-53	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

2. Emissions From TRANSFER POINTS (continued)

Transfer Point ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTALS	38.450	52.355	13.854	16.850	18.186	24.762	6.553	7.970

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.4 Aggregate Handling and Storage Piles

Emissions From Batch Drop

E = k*(0.0032) * [(U/5)^1.3]/[(M/2)^1.4] = pounds/ton

Where:		PM	PM-10
k =	Particle Size Multiplier (dimensionless)	0.74	0.35
U =	Mean Wind Speed (mph)		
M =	Material Moisture Content (%)		

Assumptions:

k - Particle size multiplier
For PM (< or equal to 30um) k = 0.74
For PM-10 (< or equal to 10um) k = 0.35

Emission Factor
For PM E= $I$88*(0.0032)*((((Inputs!$I$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4))
=lb/ton

For PM-10 E= $J$88*(0.0032)*((((Inputs!$I$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4))
=lb/ton

For lb/hr [lb/ton]*[ton/hr] = [lb/hr]

For Tons/year [lb/ton]*[ton/yr]*[ton/2000lb] = [ton/yr]

3. Emissions From WIND EROSION OF STOCKPILES

Stockpile ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
OS-1	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-2	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-3	0.316	1.383	0.079	0.346	0.148	0.650	0.037	0.162
Bin 1	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
Bin 2	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
Bin 3	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
OS-4	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-5	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-6	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-7	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-8	0.316	1.383	0.079	0.346	0.148	0.650	0.037	0.162
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTALS	2.159	9.456	0.537	2.351	1.015	4.444	0.252	1.105

Source:
Air Pollution Engineering Manual

Storage Pile Wind Erosion (Active Storage)

E = 1.7*[s/1.5]*[(365-p)/235]*[f/15] = (lb/day/acre)

Where:

s =	silt content of material
p =	number of days with >0.01 inch of precipitation per year
f =	percentage of time that the unobstructed wind speed
	exceeds 12 mph at the mean pile height

Emission Factors

For PM E=(1.7)*((Inputs!F147)/1.5)*((365-Inputs!I139)/235)*((Inputs!I140)/15)

For PM-10 E=0.47*(1.7)*((Inputs!F147)/1.5)*((365-Inputs!I139)/235)*((Inputs!I140)/15)

For lb/hr [lb/day/acre]*[day/24hr]*[base area of pile (acres)] = lb/hr

For Ton/yr [lb/day/acre]*[365day/yr]*[Ton/2000lb]*[base area of pile (acres)] = Ton/yr

4. Emissions From UNPAVED HAULROADS

Item No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	48.55	172.06	14.57	51.62	14.33	50.79	4.30	15.24
2	48.55	125.14	14.57	37.54	14.33	36.94	4.30	11.08
3	15.02	28.60	4.50	8.58	4.43	8.44	1.33	2.53
4	76.48	134.61	22.95	40.38	22.58	39.73	6.77	11.92
5	48.55	31.28	14.57	9.39	14.33	9.23	4.30	2.77
6	20.02	40.04	6.01	12.01	5.91	11.82	1.77	3.55
7	24.03	11.73	7.21	3.52	7.09	3.46	2.13	1.04
8	22.40	22.40	6.72	6.72	6.61	6.61	1.98	1.98
TOTALS	303.60	565.87	91.08	169.76	89.61	167.02	26.88	50.11

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.2 Unpaved Roads

Emission Estimate For Unpaved Haulroads at Industrial Sites (equation 1)

E= k*((s/12)^a)*((W/3)^b) =lb/vmt

Where:

		PM	PM-10
k =	particle size multiplier	4.90	1.50
a =	empirical constant	0.7	0.9
b =	empirical constant	0.45	0.45
P =	number of days per year with precipitation >0.01 inch	157	

Emission Factors

For PM E= (($I$35)*(((Inputs!$I$163)/12)^($I$36))*(((Inputs!H171)/3)^$I$37))*((365-$I

For PM-10 E= (($J$35)*(((Inputs!$I$163)/12)^($J$36))*(((Inputs!H171)/3)^$J$37))*((365-

For lb/hr (lb/vmt)*(miles per trip)*(Max trips per hour)

For Ton/yr (lb/vmt)*(miles per trip)*(Max trips per year)*(1/2000)

5. Emissions From INDUSTRIAL PAVED HAULROADS

Item No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.1 PAVED ROADS

Emission Estimate For Paved Haulroads

E = [k * (sL/2)^0.65 * (W/3)^1.5 - C] * (1 - (P/4*N) = lb / Vehicle Mile Traveled (VMT)

Where:

		PM	PM-10
k =	particle size multiplier	0.082	0.016
sL =	road surface silt loading, (g/ft^2)	70	
P =	number of days per year with precipitation >0.01 inch	146	
N =	number of days in averaging period	365	
C=	factor for exhaust, brake wear and tire wear	0.0047	0.0047

Emission Factors

For PM E= ($I$34*((($I$35)/2)^0.65)*(((Inputs!G190)/3)^1.5)-($I$38))*(1-((Inputs!$I$1

For PM-10 E= ($J$34)*((($I$35)/2)^0.65)*(((Inputs!G190)/3)^1.5))-($I$38))*(1-((Inputs!I

For lb/hr (lb/vmt)*(miles per trip)*(Max trips per hour)

For Ton/yr (lb/vmt)*(miles per trip)*(Max trips per year)*(1/2000)

rec'd 12/16/17

PROCESS FLOW DIAGRAM

WOLF RUN MINING COMPANY
SENTINEL PREPARATION PLANT

DRAWN BY: RS	SCALE: SCHEMATIC
CREATED: MARCH 2014	MFN 00-33302
REVISED: OCTOBER 2016 (PC)	PLEASANT DISTRICT BARBOUR COUNTY WEST VIRGINIA
PREPARED BY: SURVEYOR AND ASSOCIATES, INC. KINGWOOD, WEST VIRGINIA	

I.D. No. 001-00005 Reg. R13-0190
Company Wolf Run Mining Company
Sentinel Prep Plant - 6.
OPR

Roberts, Daniel P

From: Roberts, Daniel P
Sent: Wednesday, December 14, 2016 8:16 AM
To: 'Nair, Greg'
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. Sorry, I just missed your email yesterday afternoon. Everything looks good. Go with it.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Tuesday, December 13, 2016 4:11 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Disregard the earlier email. Here is the corrected version. Does this look okay?

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Tuesday, December 13, 2016 4:08 PM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

You are welcome. Sounds like a plan. Let me know if any other questions pop up as you make the corrections.

Dan

Entire Document
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From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Tuesday, December 13, 2016 3:55 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Thanks for reviewing the documents that I emailed to you. Thanks for providing the comments below. Those are easily correctable. I have started the process of correcting. I am hopeful to finalize the appropriate changes throughout the application tomorrow and place in the mail to your attention.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Tuesday, December 13, 2016 3:32 PM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. I reviewed the revised Process Description and Process Flow Diagram that you sent me and offer the following comments:

1. In the Process Description – Clean Coal Circuit, the second tab references BC-19 as being fed by BC-5 and then does not refer to it again while the 15th tab describes the middlings exiting the prep plant on BC-19, to BC-17, to BC-18, to BC-20 and finally onto OS-7. It appears that the reference to BC-19 should be deleted from the second tab.
2. In the Process Description – Clean Coal Circuit, the fifth tab contains a typo and reads "... to stacking tub (ST-2)..." and should read "...to stacking tube (ST-2)..."
3. In the Process Description – Clean Coal Circuit, the 11th tab describes the raw coal entering the underground feeder, but not where it goes after that. It appears that is fed onto BC-7 also, the same as the other underground feeders.
4. In the Process Description – Refuse Circuit, the fifth tab does not include any description of how refuse is loaded from BS-2 to trucks.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Monday, December 12, 2016 1:30 PM

To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

I have revised the narrative Attachment G process description and the process flow diagram and both are attached for your review. If you find these acceptable then I will complete the remaining comments and get everything sent out to you.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Thursday, December 08, 2016 9:58 AM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. I am in the office today and should be near my desk most of the day. If it is alright with you, can I get familiar with the letter and its contents again and just call you in about 15 minutes or so? Or give me a time to call later in the day...

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Wednesday, December 7, 2016 2:00 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

I have a question or two on the comments. When would be a good time for me to call and discuss with you?

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive

Roberts, Daniel P

From: Nair, Greg <GNair@archcoal.com>
Sent: Monday, December 12, 2016 1:30 PM
To: Roberts, Daniel P
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant
Attachments: PROCESS FLOW DIAGRAM_10.16.pdf; Attachment G_12.12.16.pdf

Dan,

I have revised the narrative Attachment G process description and the process flow diagram and both are attached for your review. If you find these acceptable then I will complete the remaining comments and get everything sent out to you.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Thursday, December 08, 2016 9:58 AM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. I am in the office today and should be near my desk most of the day. If it is alright with you, can I get familiar with the letter and its contents again and just call you in about 15 minutes or so? Or give me a time to call later in the day...

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Wednesday, December 7, 2016 2:00 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

I have a question or two on the comments. When would be a good time for me to call and discuss with you?

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Friday, November 18, 2016 3:10 PM
To: Nair, Greg
Cc: McKeone, Beverly D
Subject: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

RE: Application Status: Incomplete
Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application No. R13-0119D
Plant ID No. 001-00005

Mr. Nair:

Your application for a modification permit for a wet wash coal preparation plant was received by this Division on August 17, 2016 and assigned to the writer for review. The applicant place a Class I legal advertisement in The Barbour Democrat on August 17, 2016. The DAQ received an original affidavit of publication on September 1, 2016. In an email dated October 21, 2016, the DAQ deemed the application to be incomplete. On November 1, 2016, the DAQ received a response with corrected application pages. Upon further review of said application and additional information received, it has been determined that the application as submitted is still incomplete based on the following items:

1. On Attachment F – Process Flow Diagram, the diagram pictures refuse conveyor BC-11 transferring refuse onto clean coal conveyor BC-19. BC-19 is supposed to be fed clean coal from conveyor BC-6. Please make corrections as necessary.

   Also, where does the refuse go after belt conveyor BC-11 now that belt conveyor BC-12 has been deleted?

2. On page 2 of Attachment G – Process Description, paragraphs 5-9 still include belt conveyor BC-12 and belt conveyor BC-13 and Open storage pile OS-7 which were relocated to the clean coal circuit. Please make corrections as necessary. In paragraph 4, please expand and describe where the refuse goes after belt conveyor BC-11. The Process Description should be an written description of the Process Flow Diagram and the history of past changes is not needed. Please just included the up to date information and proposed changes.

3. It appears that 360 TPH and 400,000 TPY exit crusher CR-2 onto conveyor BC-15. Therefore, the following changes need to be made:

- On the Equipment Table and Conveying Affected Source Sheet, change the maximum capacity of BC-15 from 800,000 TPY to 400,000 TPY.
- On Attachment N – Emission Calculations, change the maximum transfer rate for transfer point TP-35 from 800,000 TPY to 400,000 TPY.

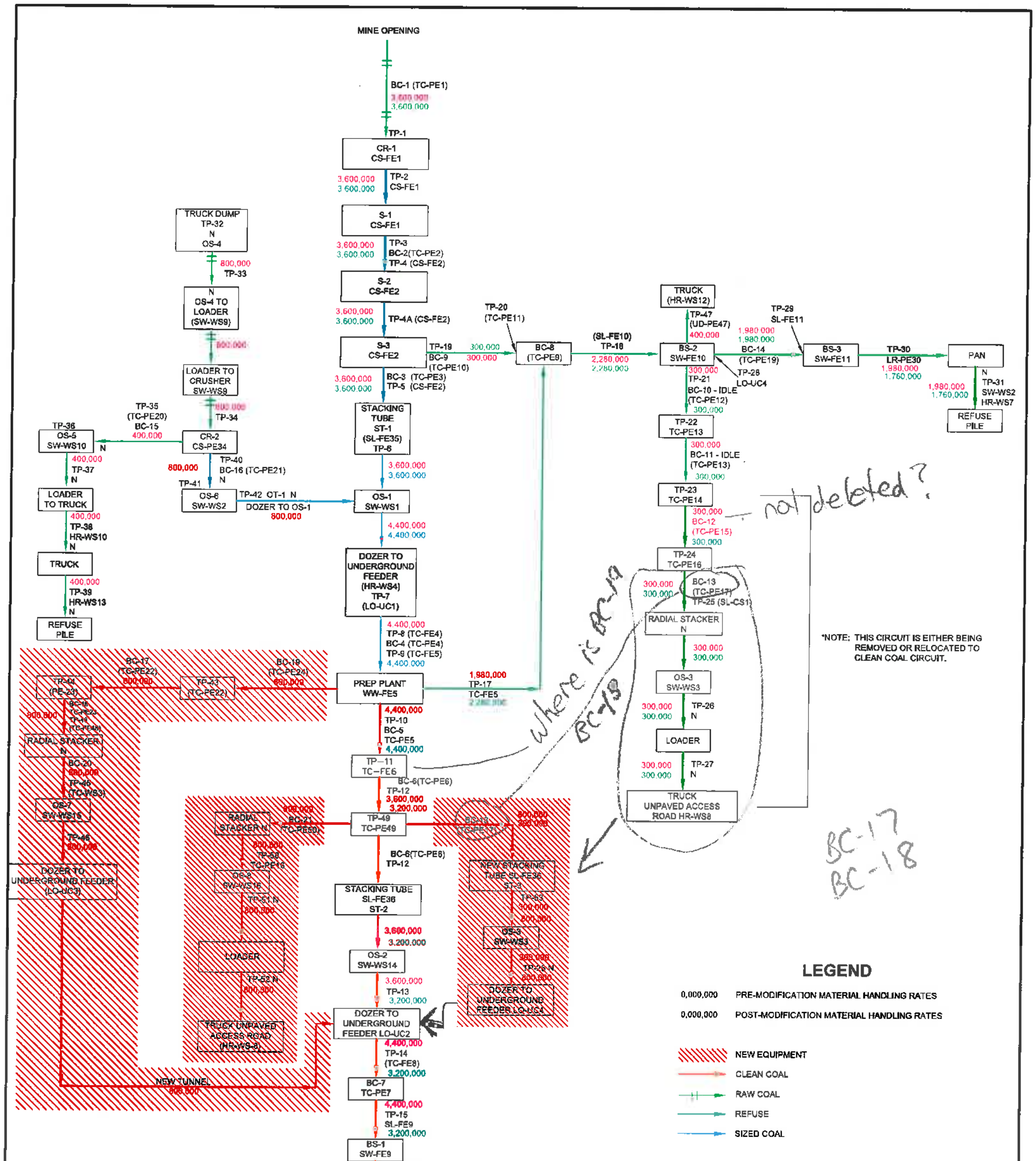
4. On the Equipment Table, change the references for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3, respectively.

5. On Attachment N – Emissions Calculations in Section 2, change the description of transfer point TP-23 from BC-11 to BC-19 to whatever is appropriate now. Change the description of transfer point TP-36 to delete the reference to SS-1. Change the description of transfer point TP-41 to delete the reference to SS-2. Transfer point TP-53 from BC-13 to OS-3 lists a control device of SW-WS (water sprays), but a control efficiency of zero. It appears that the control device should be changed to N (none).

6. On Attachment N – Emissions Calculations in Section 3, change the stockpile base area for OS-3 from 62,500 ft2 to 46,875 ft2.

Please address the above deficiencies in writing within fifteen (15) days of the receipt of this email. Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application.

Should you have any questions, please contact Dan Roberts at (304) 926-0499 ext. 1210 or reply to this email.



PROCESS FLOW DIAGRAM

WOLF RUN MINING COMPANY
SENTINEL PREPARATION PLANT

DRAWN BY: RS	SCALE: SCHEMATIC
CREATED: MARCH 2014	MFN 00-33302
REVISED: OCTOBER 2016 (PC)	PLEASANT DISTRICT BARBOUR COUNTY WEST VIRGINIA
PREPARED BY: SURVEYOR AND ASSOCIATES, INC. KINGWOOD, WEST VIRGINIA	

ATTACHMENT G
PROCESS DESCRIPTION

Deep Mine Raw Coal Circuit

- Raw coal exits the mine by a 54" belt conveyor (BC-1) which is protected by a partial enclosure (TC-PE1).
- Belt Conveyor 1 goes through transfer point (TP-1) to Double Roll Crusher (CR-1)
- From (CR-1) coal will go through transfer point 2 (TP-2) to Double Deck Screen (S-1), full enclosure (CS-FE1) protects structures from TP-1 to S-1.
- From S-1 the coal processes through transfer point 3 (TP-3) also protected by CS-FE1 to 54" belt conveyor 2 (BC-2) protected by partial enclosure 2 (TC-PE2).
- The raw coal than passes through transfer point 4 (TP-4) protected by full enclosure 2 (CS-FE2) to double deck screen 2 (S-2) onto double deck screen 3 (S-3) through transfer point 4A (TP-4A).
- Sized coal leaving double deck screen 3 passes through transfer point 5 (TP-5) also protected by full enclosure 2 (CS-FE2) to 48" belt conveyor 3 (BC-3) protected by partial enclosure (TC-PE3).
- The sized coal will then pass through transfer point 6 (TP-6) to stacking tube 1 (ST-1) and stockpile (OS-1) protected by (SL-FE35) and (WS-SW1).
- The sized coal will enter an underground feeder via dozer through transfer point 7 (TP-7) which is protected by (LO-UC1).
- The sized coal will exit the underground feeder through transfer point 8 (TP-8) protected by full enclosure 4 (TC-FE4) to 30" belt conveyor 4 (BC-4) protected by partial enclosure 4 (TC-PE4).
- Sized coal will exit belt conveyor 4 through transfer point 9 (TP-9) inside the preparation plant, protected by full enclosure 5 (TC-FE5).

ATTACHMENT G
PROCESS DESCRIPTION

Trucked Raw Coal Circuit

- Raw coal will be trucked to a truck dump and unloaded onto stockpile (OS-4) at transfer point 32 (TP-32).
- At transfer point 33 (TP-33) raw coal will be transferred from (OS-4) by an endloader. The endloader will take the raw coal to crusher (CR-2) which is protected by (CS-PE34) at transfer point 34 (TP-34) which is also protected by water (SW-WS9).
- From crusher (CR-2) refuse which is greater than 2 inches will enter onto belt conveyor 15 (BC-15) which is protected by partial enclosure (TC-PE20) at transfer point 35 (TP-35).
- From belt conveyor 15 (BC-15) refuse will enter onto stockpile (OS-5) at transfer point 36 (TP-36).
- An endloader will remove the refuse from stockpile (OS-5) at transfer point 37 (TP-37). The loader will then place the refuse in a truck at transfer point 38 (TP-38). The truck will then haul the material to the refuse pile and unload onto the refuse pile at transfer point 39 (TP-39).
- At transfer point 40 (TP-40), protected by partial enclosure (TC-PE21) sized coal will exit crusher (CR-2) and enter onto belt conveyer (BC-16).
- Belt conveyor (BC-16) will transfer sized coal onto stockpile (OS-6) at transfer point 41 (TP-41). The sized coal will be transferred from stockpile (OS-6) to stockpile (OS-1) by dozer at transfer point 42 (TP-42).
- At stockpile (OS-1) the coal will enter the underground feeder and proceed through the preparation plant as discussed earlier in the process description. Once the clean coal exits the preparation plant onto belt conveyor (BC-5) to belt conveyor (BC-19).

ATTACHMENT G
PROCESS DESCRIPTION

Clean Coal Circuit

- Coal will exit the preparation plant at transfer point 10 (TP-10) (TC-FE5) and enter on 36" belt conveyor 5 (BC-5) which is protected by partial enclosure 5 (TC-PE5).
- Belt conveyor 5 (BC-5) will transfer to 36" belt conveyor 6 (BC-6) protected by partial enclosure 6 (TC-PE6) or belt conveyor 19 (BC-19) through transfer point 11 (TP-11) protected by full enclosure 6 (TC-FE6).
- The coal will then pass through transfer point 49 (TP-49).
- A plow (flop gate) will be installed in BC-6 at transfer point 49 (TP-49) which will be protected by a partial enclosure 49 (TC-PE49).
- The coal will then pass through transfer point 12 (TP-12) to stacking tub (ST-2) and stockpile (OS-2) protected by (SL-FE36).
- The coal will enter an underground feeder via dozer, (LO-UC2), transfer point 13 (TP-13), protected by (LO-UC2).
- The coal will exit the underground feeder through transfer point 14 (TP-14) protected by full enclosure 8 (TC-FE8) to 60" belt conveyor 7 (BC-7) protected by partial enclosure 7 (TC-PE7).
- Coal will exit belt conveyor 7 through transfer point 15 (TP-15) to Bin 1 (BS-1) protected by full enclosure 9 (SL-FE9).
- The coal will exit BS-1 to the railroad cars through transfer point 16 (TP-16) protected by (LR-PE16).
- Belt conveyor (BC-6) will transfer coal to Belt conveyor (BC-13) to new stacking tube (ST-3) which will transfer clean coal at transfer point 53 (TP-53) to stockpile (OS-3).
- The coal will enter an underground feeder via dozer, (LO-UC4) transfer point 26 (TP-26), protected by (LO-UC4).
- The plow (flop gate) to be installed in BC-6 at transfer point 49 (TP-49) will be protected by partial enclosure 49 (TC-PE49). The plow at TP-49 will divert the material into a chute off the side of BC-6 at TP-49, then depending on which way the flop gate is positioned at TP-49 will determine whether the material goes to BC-13 and the new stacking tube (ST-3) or to BC-21 (the new radial stacker) to OS-8.
- Belt conveyor (BC-21) which is a radial stacker will transfer coal to stockpile (OS-8) at transfer point 50 (TP-50).
- From stockpile OS-8, clean coal will be removed by a loader at transfer point 52 (TP-52), the loader will load trucks at transfer point 51 (TP-51).
- The middlings will exit the plant on belt conveyor 19 (BC-19) and will transfer middlings to belt conveyor (BC-17) at transfer point 43 (TP-43) which is protected by partial enclosure (TC-PE22).
- At transfer point 44 (TP-44) coals will transfer to belt conveyor (BC-18) which is protected by partial enclosure (TC-PE23).
- Belt conveyor (BC-18) will transfer the middlings to Radial Stacker at transfer point (TP-48 which is protected by partial enclosure (TC-PE48).
- Radial Stacker (BC-20) will transfer middlings to stockpile (OS-7) at transfer point 45 (TP-45).
- From stockpile (OS-7) coal will be pushed to an underground feeder by dozer at transfer point 46 (TP-46) which is protected by (LO-UC3).

ATTACHMENT G
PROCESS DESCRIPTION

Clean Coal Circuit cont.

- Coal will flow through the underground tunnel until it enters onto belt conveyor (BC-7) which is protected by partial enclosure (TC-PE7) at transfer point (TP-14) which is protected by full enclosure (TC-FE8).
- Belt conveyor (BC-7) will transfer coal into Bin 1 (BS-1) at transfer point (TP-15) which is protected by full enclosure (SL-FE9).
- From (BS-1) all coal will enter onto the rail at transfer point (TP-16) which is protected by (LR-TC1).

ATTACHMENT G
PROCESS DESCRIPTION

Refuse Circuit

- At full enclosure 2 (FE-2) refuse will exit double screen (S-3) through transfer point 19 (TP-19) protected by (CS-FE2) to 42" belt conveyor 9 (BC-9) protected by partial enclosure 10 (TC-PE10).
- From belt conveyor 9 refuse will enter onto 36" belt conveyor 8 (BC-8) protected by partial enclosure 9 (TC-PE9) through transfer point (TP-20) protected by partial enclosure 11 (TC-PE11).
- Also entering onto belt conveyor 8 (BC-8) is refuse, exiting the preparation plant at transfer point 17 (TP-17) protected by full enclosure 5 (TC-FE5).
- All refuse will enter Bin 2 (BS-2), protected by full enclosure 10 (SW-FE10) from belt conveyor 8 through transfer point 18 (TP-18) also protected by full enclosure 10 (SW-FE10).
- From (BS-2) refuse will exit by two different transfer points; the main process will have the refuse exiting BS-2 pass through transfer point 28 (TP-28) protected by full enclosure 10 (SW-FE10) to 36" belt conveyor 14 (BC-14) protected by partial enclosure 19 (TC-PE19). add BS-2 to truck
- From belt conveyor 14 (BC-14) refuse will enter Bin 3 (BS-3) through transfer point 29 (TP-29) protected by full enclosure (SL-FE11).
- Refuse will discharge from BS-3 to a pan by transfer point 30 (TP-30) protected by (LR-PE30). The pan will then spread the refuse to the refuse pile through transfer point 31 (TP-31).
- The secondary process proposed the refuse exiting BS-2 onto belt conveyor 10 at transfer point 22 (TP-22) protected by partial enclosure 13 (TC-PE13) and enter onto 24" belt conveyor 11 (BC-11) protected by partial enclosure 13 (TC-PE13).
- Refuse will then pass through transfer point 23 (TP-23) protected by partial enclosure 14 (TC-PE14) to 24" belt conveyor 12 (BC-12) protected by partial enclosure 15 (TC-PE15).
- Belt conveyor 12 will exit refuse through transfer point 24 (TP-24) protected by partial enclosure 16 (TC-PE16) onto 24" belt conveyor 13 (BC-13) protected by partial enclosure (TC-PE17) attached to a radial stacker protected by (SI-CS1).
- Refuse will then enter onto stockpile (OS-3) through transfer point 25 (TP-25).
- From stockpile OS-3, refuse will be removed by a loader at transfer point 26 (TP-26), the loader will load trucks at transfer point 27 (TP-27).
- The trucks will leave the site via unpaved and paved access roads protected by water (HR-WS8).
- The secondary process identified above is being revised in this modification. It should be noted that BC-10 and BC-11 are Idle. It should also be noted that BC-12 has been removed and the remaining from TP-23 to end of circuit is either being removed or relocated to the clean coal circuit.

ATTACHMENT G
PROCESS DESCRIPTION

Stockpile bases for previously approved stockpile area will be enlarged to 37,500 square feet or 50,000 tons maximum. Two stockpiles, OS-3 and OS-8, will be enlarged to a base of 46,875 square feet or 62,500 tons maximum.

ID No. 001-00005 R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Prep Plant 6.
Initials DPR

Roberts, Daniel P

From: Nair, Greg <GNair@archcoal.com>
Sent: Thursday, December 8, 2016 10:05 AM
To: Roberts, Daniel P
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Yes that would be fine. Give me a call when you ready. I am in the office all morning.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Thursday, December 08, 2016 9:58 AM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. I am in the office today and should be near my desk most of the day. If it is alright with you, can I get familiar with the letter and its contents again and just call you in about 15 minutes or so? Or give me a time to call later in the day...

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Wednesday, December 7, 2016 2:00 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

I have a question or two on the comments. When would be a good time for me to call and discuss with you?

Greg Nair
Arch Coal, Inc.

Roberts, Daniel P

From:	Roberts, Daniel P
Sent:	Friday, November 18, 2016 3:10 PM
To:	Nair, Greg (GNair@archcoal.com)
Cc:	McKeone, Beverly D
Subject:	WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

RE: Application Status: Incomplete
Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application No. R13-0119D
Plant ID No. 001-00005

Mr. Nair:

Your application for a modification permit for a wet wash coal preparation plant was received by this Division on August 17, 2016 and assigned to the writer for review. The applicant place a Class I legal advertisement in The Barbour Democrat on August 17, 2016. The DAQ received an original affidavit of publication on September 1, 2016. In an email dated October 21, 2016, the DAQ deemed the application to be incomplete. On November 1, 2016, the DAQ received a response with corrected application pages. Upon further review of said application and additional information received, it has been determined that the application as submitted is still incomplete based on the following items:

1. On Attachment F – Process Flow Diagram, the diagram pictures refuse conveyor BC-11 transferring refuse onto clean coal conveyor BC-19. BC-19 is supposed to be fed clean coal from conveyor BC-6. Please make corrections as necessary.

   Also, where does the refuse go after belt conveyor BC-11 now that belt conveyor BC-12 has been deleted?

2. On page 2 of Attachment G – Process Description, paragraphs 5-9 still include belt conveyor BC-12 and belt conveyor BC-13 and Open storage pile OS-7 which were relocated to the clean coal circuit. Please make corrections as necessary. In paragraph 4, please expand and describe where the refuse goes after belt conveyor BC-11. The Process Description should be an written description of the Process Flow Diagram and the history of past changes is not needed. Please just included the up to date information and proposed changes.

3. It appears that 360 TPH and 400,000 TPY exit crusher CR-2 onto conveyor BC-15. Therefore, the following changes need to be made:

   - On the Equipment Table and Conveying Affected Source Sheet, change the maximum capacity of BC-15 from 800,000 TPY to 400,000 TPY.
   - On Attachment N – Emission Calculations, change the maximum transfer rate for transfer point TP-35 from 800,000 TPY to 400,000 TPY.

4. On the Equipment Table, change the references for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3, respectively.

5. On Attachment N – Emissions Calculations in Section 2, change the description of transfer point TP-23 from BC-11 to BC-19 to whatever is appropriate now. Change the description of transfer point TP-36 to delete the reference to SS-1. Change the description of transfer point TP-41 to delete the reference to SS-2. Transfer point TP-53 from BC-13 to OS-3 lists a control device of SW-WS (water sprays), but a control efficiency of zero. It appears that the control device should be changed to N (none).

6. On Attachment N – Emissions Calculations in Section 3, change the stockpile base area for OS-3 from 62,500 ft2 to 46,875 ft2.

Please address the above deficiencies in writing within fifteen (15) days of the receipt of this email. Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application.

Should you have any questions, please contact Dan Roberts at (304) 926-0499 ext. 1210 or reply to this email.

ID No. 001-00005 R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Prep Plant 6.
Initials DPR

Roberts, Daniel P

From: Nair, Greg <GNair@archcoal.com>
Sent: Tuesday, November 15, 2016 2:35 PM
To: Roberts, Daniel P
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Just following up to your email from last week. I failed (forgot) to realize how many days off the state has to various holidays, etc.

I certainly appreciate anything you can do to review resubmitted application.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Thursday, November 10, 2016 4:23 PM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

Hey. Sorry, Tuesday was a state holiday and so is tomorrow (Friday). I am taking the corrections you submitted home with me this weekend to look through them and I will get back to you early next week.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Tuesday, November 8, 2016 11:29 AM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Cc: Freeman, Thomas <TFreeman@archcoal.com>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

NON-CONFIDENTIAL

Roberts, Daniel P

From: Roberts, Daniel P
Sent: Thursday, November 10, 2016 4:23 PM
To: 'Nair, Greg'
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

I.D. No. 001-00005 Reg R13-01190
Company Wolf Run Mining Company
Facility Sentinel Prep Plant 6
Initials _____ DPR

Greg,

Hey. Sorry, Tuesday was a state holiday and so is tomorrow (Friday). I am taking the corrections you submitted home with me this weekend to look through them and I will get back to you early next week.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Tuesday, November 8, 2016 11:29 AM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Cc: Freeman, Thomas <TFreeman@archcoal.com>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Good Morning Dan.

Just wanted to drop an email and see how the application review of the information that I resubmitted is coming along.

Any update would be great.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Wednesday, October 26, 2016 3:54 PM
To: Nair, Greg
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Greg,

NON-CONFIDENTIAL

Greg Nair
Manager Surface Mine Planning
(304)265-9778 Direct
(304)290-3202 Mobile

gnair@archcoal.com

October 31, 2016

I.D. No. 001-00005 Reg. R13-0119D
Company Wolf Run Mining Company
Sentinel Prep Plant
DAQ

Mr. Daniel Roberts
WV Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304

Re: Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application R13-0119D
Plant ID No. 001-00005

Dear Mr. Roberts:

Wolf Run Mining Company's application for a modification permit for a wet wash coal preparation plant was received by your Division on August 17, 2016 and assigned to you for review. Wolf Run Mining Company placed a Class I legal advertisement in The Barbour Democrat on August 17, 2016. The DAQ received original affidavit of publication on September 1, 2016. Upon initial review of said application and additional information forwarded to you, it has been determined that the application as submitted is incomplete based. This letter shall address those items that were deemed incomplete. Therefore, I offer the following comments based on your review:

1. Belt conveyor BC-13 and open storage pile OS-3 were previously permitted as part of the refuse circuit. This application now includes them as part of the clean coal circuit. Were they previously constructed and now relocated or were they never constructed?

   Wolf Run Response - You are correct in that BC-13 and OS-3 were previously permitted as part of the refuse circuit. This application now includes them as part of the clean coal circuit. Yes this structure was constructed and is now being relocated in this application.

   DAQ Comment - The Equipment Table lists BC-13 as a refuse conveyor with maximum capacities of 360 TPH and 800,000 TPY. The Conveying Affected Source Sheet lists BC-13 as a refuse conveyor with maximum capacities of 244 TPH and 800,000 TPY. The emissions calculations spreadsheet still includes BC-13 as part of the refuse circuit and lists transfer point TP-24 as BC-12 to BC-13 with maximum transfer rates of 244 TPH and 300,000 TPY.

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Grafton, West Virginia 26354
www.archcoal.com

Entire Document
NON-CONFIDENTIAL

ArchCoal

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(304)265-9778 Direct
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gnair@archcoal.com

There is no exit transfer point listed from BC-13 to another piece of equipment or open storage pile. New transfer point TP-49 from BC-6 to Plow to either BC-13/BC-21 includes BC-13 in the clean coal circuit, but once again there is no exit transfer point from BC-13. Please make corrections as necessary to provide consistent information throughout the application.

Wolf Run Response – The Equipment Table has been revised to list BC-13 as a Clean Coal conveyor with maximum capacities of 360 TPH and 800,000 TPY. The Conveying Affected Source Sheet has been revised to list BC-13 as a clean coal conveyor with maximum capacities of 360 TPH and 800,000 TPY. The emissions calculations spreadsheet has been revised to include BC-13 as part of the clean coal circuit and lists transfer point TP-53 with maximum transfer rates of 360 TPH and 800,000 TPY. It should be noted that BC-12 is removed.

revise PD & PFD

2. On Attachment F – Process Flow Diagram, the drawing does not include or label belt conveyors BC-3 and BC-19. The drawing depicts belt conveyors BC-17 and BC-18 as part of the refuse circuit being fed by belt conveyor BC-12 and transferring refuse to open storage pile OS-7, but they are listed and described throughout the rest of the application as clean coal conveyors. The Process Flow Diagram also does not include various transfer points, such as TP-6 from BC-3 to OS-1, TP-45 from BC-20 to OS-7. There is no transfer point from BC-13 to OS-3. Most transfer points list their control device, but some do not. Transfer point TP-23 is listed twice… once before belt conveyor BC-12 and once after it. Please make corrections as necessary.

Wolf Run Response – The drawing now includes and lists belt conveyors BC-3 and BC-19. The drawing has been revised to depict belt conveyors BC-17 and BC-18 as part of the clean coal circuit being fed by belt conveyor BC-19 and ultimately transferring clean coal (sized) to open storage pile OS-7. Please note that belt conveyor BC-12 has been removed. The Process Flow Diagram has been revised to include the various transfer points, such as TP-6 from BC-3 to OS-1, TP-45 from BC-20 to OS-7 that were previously omitted. The transfer point from BC-13 to OS-3 has been added. I believe we have corrected the transfer points that did not list their control device. Transfer point TP-23 that was listed twice has been corrected.

PDF shows refuse being fed onto BC-12

Didn't add all controls for TP

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100 Tygart Drive,
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Greg Nair
Manager Surface Mine Planning
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(304)290-3202 Mobile

gnair@archcoal.com

DAQ Comment - The drawing depicts new radial stacker BC-20 as part of the refuse circuit and deposits material onto open storage pile OS-7. From open storage pile OS-7, where does the refuse go after it enters the underground feeder at transfer point TP-46? The rest of the application references BC-20 and OS-7 as handling clean coal.

Wolf Run Response – The drawing actually reflects new radial stacker BC-20 as part of the clean coal circuit and deposits material onto open storage pile OS-7. From storage pile OS-7, the clean coal will enter the underground feeder at transfer point TP-46 and ultimately will end up at BS-1. Please note that this is now part of the clean coal process.

3. On the Equipment Table and the Conveying Affected Source Sheet, belt conveyor BC-1 lists its maximum capacities as 2,500 TPH and 4,400,000 TPY, which was an increase from the previously permitted values of 1,350 TPH and 3,600,000 TPY. However, this appears to be a typo because the crusher that is fed by BC-1 is rated for 1,350 TPH and 3,600,000 TPY as well as everything downstream from there. Please make corrections if necessary.

Wolf Run Response – On the Equipment Table and the Conveying Affected Source Sheet, belt conveyor BC-1 has been revised to list its maximum capacities as 1,350 TPH and 3,600,000 TPY.

DAQ Comment - Belt conveyor BC-15 is listed with a maximum annual capacity of 800,000 TPY on both forms. However, in the Emissions Calculations Spreadsheet Section 1, transfer points TP-35 from CR-2 to BC-15 from BC-15 to OS-5 list the maximum annual transfer rate as 400,000 TPY, which matches the maximum annual throughput for OS-5. Please make corrections as necessary.

Wolf Run Response – Belt conveyor BC-15 is listed with a maximum annual capacity of 800,000 TPY on both forms. The Emissions Calculations Spreadsheet Section 1, transfer points TP-35 from CR-2 to BC-15 has been revised to list the maximum annual transfer rate of 800,000. BC-15 to OS-5 is listed correctly with the maximum annual transfer rate as 400,000 TPY. This matches the previously approved permit as nothing is being revised at this location.

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DAQ Comment - Crusher CR-1 is listed with maximum capacities of 1,350 TPH and 3,600,000 TPY on both forms and in the Emissions Calculations Spreadsheet under the transfer points section. However, in the Emissions Calculations Spreadsheet, the inputs list 1,350 TPH and 1,849,303 TPY. Please make corrections as necessary.

Wolf Run Response – The Emissions Calculations Spreadsheet for Crusher CR-1 has been revised to list the correct inputs list 1,350 TPH and 3,600,000 TPY.

DAQ Comment - Crusher CR-2 is listed with maximum capacities of 600 TPH and 3,600,000 TPY on both forms. However, in the Emissions Calculations Spreadsheet, the inputs list zero TPH and zero TPY. Also, the maximum capacities for transfer points TP-34 from Loader to CR-2 is listed as 360 TPH and 800,000 TPY, TP-35 from CR-2 to BC-15 is listed as 360 TPH and 400,000 TPY and TP-40 from CR-2 to BC-16 is listed as 360 TPH and 800,000 TPY. Please make corrections as necessary.

Wolf Run Response – The Emissions Calculations Spreadsheet for Crusher CR-2 has been revised to list the correct inputs list 600 TPH and 3,600,000 TPY. The maximum capacities for transfer points TP-34 from Loader to CR-2 is listed as 360 TPH and 800,000 TPY, TP-35 from CR-2 to BC-15 is listed as 360 TPH and 400,000 TPY and TP-40 from CR-2 to BC-16 is listed as 360 TPH and 800,000 TPY are correctly shown.

DAQ Comment - In the Equipment Table, Open stockpile OS-3 is listed as a refuse stockpile with a maximum base area of 46,875 ft2 and capacity of 300,000 tons. However, the Storage Activity Affected Source Sheet lists open stockpile OS-3 as a clean coal stockpile with a maximum base area of 62,500 ft2 and capacity of 800,000 tons. Open stockpile OS-7 is listed as a sized coal stockpile. However, the Storage Activity Affected Source Sheet lists open stockpile OS-7 as a clean coal stockpile. Please make corrections as necessary.

Wolf Run Response – Open Stockpile has been revised to list as a clean coal stockpile on the Equipment Table with a maximum base are of 62,500 ft2 and capacity of 800,000 tons. Open stockpile OS-7 is a sized coal (clean) stockpile. The Storage Activity Affected Source Sheet has been revised.

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4. On the Equipment Table and in the Conveying Affected Source Sheet, clean coal belt conveyors BC-5 and BC-6 are listed with a maximum hourly capacity of 800 TPH each. However, in the emission calculations spreadsheet, transfer points TP-10 from the Prep Plant to BC-5 and TP-11 from BC-6 to OS-2 are listed as 600 TPH. Make corrections as necessary.

Wolf Run Response – The Equipment Table and the Conveying Affected Source Sheet, clean coal belt conveyors BC-5 and BC-6 are listed with a maximum hourly capacity of 800 TPH each. This is correct and matches the previously approved permit. The emission calculations spreadsheet, transfer points TP-10 from the Prep Plant to BC-5 and TP-11 from BC-6 to OS-2 which was listed as 600 TPH has been revised to 800 TPH.

5. On the Storage Activity Affected Source Sheet, please change the Source Identification Number for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3, respectively, to match information in the rest of the application.

Wolf Run Response – The Storage Activity Affected Source Sheet has been revised to change the Source Identification Number for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3. This now matches information in the rest of the application.

6. In the Emissions Calculations Spreadsheet Section 1, transfer points TP-21 from BS-2 to BC-10, TP-22 from BC-10 to BC-11 and TP-23 from BC-12 to BC-13 all list zero for their maximum hourly transfer rate. Also, BC-13 is now part of the clean coal circuit.

Wolf Run Response – In the Emissions Calculations Spreadsheet Section 1, transfer points TP-21 from BS-2 to BC-10, TP-22 from BC-10 to BC-11 and TP-23 from BC-12 to BC-13 have been revised to remove the listing of zero for their maximum hourly transfer rate to the approved permit rate of 244. Also, BC-13 which is now part of the clean coal circuit has been revised.

7. In Section 3 Unpaved Haulroads, Item 8 has a zero entered for number of wheels, mean vehicle weight, mean vehicle speed and miles per trip. Please explain. Make corrections as necessary.

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Wolf Run Response – In Section 3 Unpaved Haulroads, Item 8 was listed as zero for number of wheels, mean vehicle weight, mean vehicle speed and miles per trip. This has been corrected.

I have addressed the deficiencies in writing within the fifteen (15) days of the receipt of the email. I am submitting a copy of the comments electronically via email and am mailing the required one copy.

If you have any additional comments or need any additional information please do not hesitate to contact me.

Sincerely,

Greg Nair
Manager Surface Mine Planning

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ATTACHMENT G
PROCESS DESCRIPTION

REVISIONS PROPOSED UNDER R13-119D – AUGUST 2016 MODIFICATION

- The middlings will exit (BC-19) to belt conveyor (BC-17) at transfer point 43 (TP-43) which is protected by partial enclosure (TC-PE22).
- At transfer point 44 (TP-44) coals will transfer to belt conveyor (BC-18) which is protected by partial enclosure (TC-PE23).
- Belt conveyor (BC-18) will transfer the middlings to Radial Stacker at transfer point (TP-48 which is protected by partial enclosure) TC-PE48).
- Radial Stacker (BC-20) will transfer middlings to stockpile (OS-7) at transfer point 45 (TP-45).
- From stockpile (OS-7) coal will be pushed to an underground feeder by dozer at transfer point 46 (TP-46) which is protected by (LO-UC3).

- A plow (flop gate) will be installed in BC-6 at transfer point 49 (TP-49) which will be protected by a partial enclosure 49 (TC-PE49).
- Belt conveyor (BC-6) will transfer coal to Belt conveyor (BC-13) to new stacking tube (ST-3) which will transfer clean coal at transfer point 53 (TP-53) to stockpile (OS-3).
- The coal will enter an underground feeder via dozer, (LO-UC4) transfer point 26 (TP-26), protected by (LO-UC4).
- The plow (flop gate) to be installed in BC-6 at transfer point 49 (TP-49) will be protected by partial enclosure 49 (TC-PE49). The plow at TP-49 will divert the material into a chute off the side of BC-6 at TP-49, then depending on which way the flop gate is positioned at TP-49 will determine whether the material goes to BC-13 and the new stacking tube (ST-3) or to BC-21 (the new radial stacker) to OS-8.
- Belt conveyor (BC-21) which is a radial stacker will transfer coal to stockpile (OS-8) at transfer point 50 (TP-50).
- From stockpile OS-8, clean coal will be removed by a loader at transfer point 52 (TP-52), the loader will load trucks at transfer point 51 (TP-51).

- Stockpile bases for previously approved stockpile area will be enlarged to 37,500 square feet or 50,000 tons maximum. Two stockpiles, OS-3 and OS-8, will be enlarged to a base of 46,875 square feet or 62,500 tons maximum.

EQUIPMENT TABLE

Equipment ID No.	Description	Year Installed	Maximum Capacity		Control Equipment
			TPH	TPY	
CR-1	Double Roll Crusher	1991*	1350	3,600,000	FE-1
CR-2	Double Roll Crusher	2011	600	3,600,000	CS-PE34
S-1	Double Deck Screen	1991*	1350	3,600,000	FE-1
S-2	Double Deck Vibrating Screen	1991*	1350	3,600,000	FE-2
S-3	Double Deck Vibrating Screen	1991*	1350	3,600,000	FE-2
Belts					
BC-1	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-1
BC-2	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-2
BC-3	Belt Conveyor - Raw Coal	1991*	1350	3,600,000	PE-3
BC-4	Belt Conveyor - Raw Coal	1991*	600	4,400,000	PE-4
BC-5	Belt Conveyor - Clean Coal	1991*	800	4,400,000	PE-5
BC-6	Belt Conveyor - Clean Coal	1991*	800	3,600,000	PE-6
BC-7	Belt Conveyor - Clean Coal	1991*	2500	4,400,000	PE-7
BC-8	Belt Conveyor - Refuse	1991*	400	2,280,000	PE-9
BC-9	Belt Conveyor - Refuse	2008	244	300,000	PE-10
BC-10	Belt Conveyor - Refuse	2008	244	300,000	PE-12
BC-11	Belt Conveyor - Refuse	2008	244	300,000	PE-13
BC-13	Belt Conveyor – Clean Coal	2016**	360	800,000	PE-17
BC-14	Belt Conveyor - Refuse	1991*	400	1,980,000	PE-19
BC-15	Belt Conveyor - Sized Coal	2011	360	800,000	PE-20
BC-16	Belt Conveyor - Sized Coal	2011	360	800,000	PE-21
BC-17	Belt Conveyor - Clean Coal	2011	360	800,000	PE-22
BC-18	Belt Conveyor - Clean Coal	2011	360	800,000	PE-23
BC-19	Belt Conveyor - Clean Coal	2011	360	800,000	PE-24
BC-20	Belt Conveyor - Clean Coal	2016**	360	800,000	PE-48
BC-21	Belt Conveyor - Clean Coal	2016**	360	800,000	PE-50

REVISED: 10/31/2016

EQUIPMENT TABLE

Storage	Description	Max. Base Area (sq. ft.)	Max. Storage Capacity (tons)	Max. Capacity TPY	Control Equipment
OS-1	Sized Coal Stockpile	37,500	50,000	4,400,000	WS-1
OS-2	Clean Coal Stockpile	37,500	50,000	3,600,000	WS-2
OS-3	Clean Coal Stockpile	46,875	62,500	800,000	WS-3
Bin 1	Clean Coal Bin	600	161	4,400,000	FE-9
Bin 2	Refuse Coal Bin	600	161	2,280,000	FE-10
Bin 3	Refuse Coal Bin	600	161	1,980,000	FE-11
OS-4	Raw Coal	37,500	50,000	800,000	WS-9
OS-5	Sized Coal Stockpile	37,500	50,000	400,000	WS-10
OS-6	Sized Coal Stockpile	37,500	50,000	800,000	WS-11
OS-7	Sized Coal Stockpile	37,500	50,000	800,000	TC-WS15
OS-8	Clean Coal Stockpile	46,875	62,500	800,000	TC-WS16

* Notes when permit was acquired by current owner, not when equipment may have been initially installed.
** Notes when equipment will be installed and/or modified, if permit approved.

CONVEYING AFFECTED SOURCE SHEET

Source Identification Number[1]	Date of Construction, Reconstruction, or Modification (Month/Year)[2]	Type of Material Handled[3]	Size of Material Handled[4]	Maximum Material Transfer Rate[5]		Average Moisture Content (%)[6]	Control Device[7]
				tons/hour	tons/year		
BC-1	11/11	RC	Raw – 2" x 0	1350	3,600,000	5 %	PE-1
BC-2	11/11	SC	Raw – 2" x 0	1350	3,600,000	5 %	PE-2
BC-3	11/11	SC	¾' x 0	1350	3,600,000	5 %	PE-3
BC-4	11/11	SC	¾' x 0	600	4,400,000	5 %	PE-4
BC-5	11/11	CC	¾' x 0	800	4,400,000	5 %	PE-5
BC-6	11/11	CC	¾' x 0	800	3,600,000	5 %	PE-6
BC-7	11/11	CC	¾' x 0	2500	4,400,000	5 %	PE-7
BC-8	11/11	R	+ ¾'	400	2,280,000	5 %	PE-9
BC-9	06/08	R	+ ¾'	244	300,000	5 %	PE-10
BC-10	06/08	R	+ ¾'	244	300,000	5 %	PE-12
BC-11	06/08	R	+ ¾'	244	300,000	5 %	PE-13
BC-13	11/11	CC	¾' x 0	360	800,000	5 %	PE-17
BC-14	11/11	R	+ ¾'	400	1,980,000	5 %	PE-19
BC-15	11/11	R	+ ¾'	360	800,000	5 %	PE-20
BC-16	11/11	SC	¾' x 0	360	800,000	5 %	PE-21
BC-17	11/11	CC	¾' x 0	360	800,000	5 %	PE-22
BC-18	11/11	CC	¾' x 0	360	800,000	5 %	PE-23
BC-19	11/11	CC	¾' x 0	360	800,000	5 %	PE-24

no BC-12 deleted

1. Enter the appropriate Source Identification Number for each conveyor using the following codes. For example, multiple belt conveyors should be designated BC-1, BC-2, BC-3 etc. Transfer points are considered emission points, not sources, and should not be included in the *Conveying Affected Source Sheet*. Transfer Point Identification Numbers shall be assigned in the *Emission Calculation Sheet*.

BC	Belt Conveyor	BE	Bucket Elevator	DL	Drag-link Conveyor
PS	Pneumatic System	SC	Screw Conveyor	VC	Vibrating Conveyor
OT	Other				

2. Enter the date that each crusher and screen was constructed, reconstructed, or modified.
3. Enter the type of material being handled - Raw Coal (RC) Sized Coal (SC) Clean Coal (CC) Refuse (R) Other (O)
4. Enter the nominal size of the material being conveyed (e.g. clean coal - ¾" x 0). If more than one material is handled by the listed conveyor, list each material and enter the appropriate data for each material.
5. Enter the maximum material transfer rate for each conveyor in tons per hour and tons per year.
6. Enter the average percent moisture content of the conveyed material.
7. Enter the control device for the conveyor. PE - Partial Enclosure (example 3/4 hoop), FE - Full Enclosure, N – None

STORAGE ACTIVITY AFFECTED SOURCE SHEET

Source Identification Number[1]	OS-1	OS-2	OS-3	OS-4	OS-5	OS-6
Type of Material Stored[2]	Sized Coal	Clean Coal	Clean Coal	Raw Coal	Sized Coal	Sized Coal
Average Moisture Content (%)[3]	5 %	5 %	5 %	5 %	5 %	5 %
Maximum Yearly Storage Throughput (tons)[4]	4,400,000	3,600,000	800,000	800,000	400,000	800,000
Maximum Storage Capacity (tons)[5]	50,000	50,000	62,500	50,000	50,000	50,000
Maximum Base Area (ft^2)[6]	37,500	37,500	46,875	37,500	37,500	37,500
Maximum Pile Height (ft)[7]	20	20	20	15	15	15
Method of Material Load-in[8]	ST-1	ST-2	ST-3	TD-1	SS-1	SS-2
Load-in Control Device Identification Number[9]	SL-FE35	SL-FE36	SL-FE37	NONE	NONE	NONE
Storage Control Device Identification Number[9]	SW-WS1	SW-WS14	SW-WS3	SW-WS9	SW-WS10	SW-WS2
Method of Material Load-out[8]	UC	UC	UC	OT	FE	OT
Load-out Control Device Identification Number[9]	LO-UC1	LO-UC2	LO-UC4	NONE	NONE	NONE

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes three storage bins, four open stockpiles and one storage building (full enclosure), the Source Identification Numbers should be BS-1, BS-2, and BS-3; OS-1, OS-2, OS-3, and OS-4; and SB-1, respectively.

BS	Bin or Storage Silo (full enclosure)	E3	Enclosure (three sided enclosure)
OS	Open Stockpile	SB	Storage Building (full enclosure)
SF	Stockpiles with wind fences	OT	Other

2. Describe the type of material stored or stockpiled. (e.g. clean coal (CC), raw coal (RC), refuse (R), sized coal (SC), other (O))
3. Enter the average percent moisture content of the stored material.
4. Enter the maximum yearly storage throughput for each storage activity.
5. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.)
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:

CS	Clamshell	SS	Stationary Conveyor/Stacker
FC	Fixed Height Chute from Bins	ST	Stacking Tube
FE	Front Endloader	TC	Telescoping Chute from Bins
MC	Mobile Conveyor/Stacker	TD	Truck Dump
UC	Under-pile or Under-Bin Reclaim Conveyor	PC	Pneumatic Conveyor/Stacker
RC	Rake or Bucket Reclaim Conveyor	OT	Other

9. Enter the appropriate Control Device Identification Number for each storage activity. Refer to Table A - *Control Device Listing* and *Control Device Identification Number Instructions* in the *Reference Document* for Control Device ID prefixes and numbering.

STORAGE ACTIVITY AFFECTED SOURCE SHEET

Source Identification Number[1]	OS-7	OS-8	BS-1	BS-2	BS-3
Type of Material Stored[2]	Sized Coal	Clean Coal	Clean Coal	Refuse	Refuse
Average Moisture Content (%)[3]	5 %	5 %	5 %	5 %	5 %
Maximum Yearly Storage Throughput (tons)[4]	800,000	800,000	4,400,000	2,280,000	1,980,000
Maximum Storage Capacity (tons)[5]	50,000	62,500	161	161	161
Maximum Base Area (ft^2)[6]	37,500	46,875	600	600	600
Maximum Pile Height (ft)[7]	20	20	8	8	8
Method of Material Load-in[8]	MC-2	MC-3	FC-1	UC-1	FC-2
Load-in Control Device Identification Number[9]	NONE	NONE	SL-FE9	SL-FE10	SL-FE11
Storage Control Device Identification Number[9]	SW-WS15	SW-WS16	SW-FE9	SW-FE10	SW-FE11
Method of Material Load-out[8]	UC	FE	FC	UC	FC
Load-out Control Device Identification Number[9]	LO-UC3	NONE	LR-PE16	LO-UC4	LR-PE30

1. Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes three storage bins, four open stockpiles and one storage building (full enclosure), the Source Identification Numbers should be BS-1, BS-2, and BS-3; OS-1, OS-2, OS-3, and OS-4; and SB-1, respectively.

BS	Bin or Storage Silo (full enclosure)	E3	Enclosure (three sided enclosure)
OS	Open Stockpile	SB	Storage Building (full enclosure)
SF	Stockpiles with wind fences	OT	Other

2. Describe the type of material stored or stockpiled. (e.g. clean coal (CC), raw coal (RC), refuse (R), sized coal (SC), other (O))
3. Enter the average percent moisture content of the stored material.
4. Enter the maximum yearly storage throughput for each storage activity.
5. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.)
6. For stockpiles, enter the maximum stockpile base area.
7. For stockpiles, enter the maximum stockpile height.
8. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:

CS	Clamshell	SS	Stationary Conveyor/Stacker
FC	Fixed Height Chute from Bins	ST	Stacking Tube
FE	Front Endloader	TC	Telescoping Chute from Bins
MC	Mobile Conveyor/Stacker	TD	Truck Dump
UC	Under-pile or Under-Bin Reclaim Conveyor	PC	Pneumatic Conveyor/Stacker
RC	Rake or Bucket Reclaim Conveyor	OT	Other

9. Enter the appropriate Control Device Identification Number for each storage activity. Refer to Table A - *Control Device Listing* and *Control Device Identification Number Instructions* in the *Reference Document* for Control Device ID prefixes and numbering.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	11/01/2011	TP-38	Loader to Truck	N	None	TP-38	N/A
Modification	11/01/2011	TP-39	Truck to Refuse Pile	N	None	TP-39	N/A
Modification	11/01/2011	TP-40	DR-2 to Belt Conveyor	TC-PE21	PE	TP-40	N/A
Modification	11/01/2011	BC-16	Belt Conveyor	TC-PE21	PE	TP-40	N/A
Modification	11/01/2011	TP-41	Belt Conveyor to OS-6	N	None	TP-41	N/A
Modification	11/01/2011	TP-42	OS-6 to OS-1 by Dozer	N	None	TP-42	N/A
Modification	11/01/2011	TP-43	Belt Conveyor 19 to Belt Conveyor 17	TC-PE22	PE	TP-43	N/A
Modification	11/22/2016	BC-17	Belt Conveyor	TC-PE22	PE	TP-44	N/A
Modification	11/22/2016	TP-44	Belt Conveyor 17 to Belt Conveyor 18	TC-PE23	PE	TP-44	N/A
Modification	11/22/2016	BC-18	Belt Conveyor	TC-PE23	PE	TP-48	N/A
Modification	11/22/2016	TP-45	Belt Conveyor to OS-7	N	None	TP-45	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

[1] Number as 1s, 2s, 3s ... or other appropriate designation. Must match process flow diagram.

[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

EQUIPMENT LIST FORM

Type Change, if any (New, Modification, or Removal)	Date of Change	Emissions Unit (Source)		Air Pollution Control Device		Emission Point	
		ID No.[1]	Source	ID No.[2]	Device Type	ID No.[3]	Emission Type[4]
Modification	06/30/2008	BC-13	Belt Conveyor	TC-PE17	PE	TP-25	N/A
Modification	11/01/2011	TP-53	BC-13 to OS-3	N	None	TP-53	N/A
Modification	11/22/2016	TP-26	Dozer to Underground Feeder	N	None	TP-26	N/A
Modification	11/01/2011	TP-32	Truck Dump to OS-4	N	None	TP-32	N/A
Modification	11/01/2011	TP-33	OS-4 to Loader	N	None	TP-33	N/A
Modification	11/01/2011	TP-34	Loader to CR-2	CS-PE34	PW	TP-34	N/A
Modification	11/01/2011	TP-35	CR-2 to Belt Conveyor	TC-PE20	PE	TP-35	N/A
Modification	11/01/2011	BC-15	Belt Conveyor	TC-PE20	PE	TP-35	N/A
Modification	11/01/2011	TP-36	Belt Conveyor to OS-5	N	None	TP-36	N/A
Modification	11/01/2011	TP-37	OS-5 to Loader	N	None	TP-37	N/A

Include **all** process equipment that will be part of this permit application review, including previously unpermitted emissions units (sources) and air pollution control devices.

[1] Number as 1s, 2s, 3s ... or other appropriate designation. Must match process flow diagram.

[2] Number as 1c, 2c, 3c ... or other appropriate designation. Must match process flow diagram.

[3] Number as 1e, 2e, 3e ...or other appropriate designation. Must match process flow diagram.

[4] Please add descriptors such as upward vertical stack, downward vertical stack, horizontal stack, relief vent, rain cap, etc.

FUGITIVE EMISSIONS SUMMARY	All Regulated Pollutants - Chemical Name/CAS [1]	Maximum Potential Uncontrolled Emissions [2]		Maximum Potential Controlled Emissions [3]		Est. Method Used [4]
		lb/hr	ton/yr	lb/hr	ton/yr	
Haul Road/Road Dust Emissions Paved Haul Roads	PM	0	0	0	0	EE
Unpaved Haul Roads	PM	303.60	565.87	91.08	169.76	EE
Storage Pile Emissions	PM	2.26	9.92	0.56	2.47	EE
Loading/Unloading Operations	N/A	N/A	N/A	N/A	N/A	N/A
Wastewater Treatment Evaporation & Operations	N/A	N/A	N/A	N/A	N/A	N/A
Equipment Leaks	N/A	Does not apply	N/A	Does not apply	N/A	N/A
General Clean-up VOC Emissions	N/A	N/A	N/A	N/A	N/A	N/A
Other						

[1] List all regulated air pollutants. Speciate VOCs, including all HAPs. Follow chemical name with Chemical Abstracts Service (CAS) number. LIST Acids, CO, CS_2, VOCs, H_2S, Inorganics, Lead, Organics, O_3, NO, NO_2, SO_2, SO_3, all applicable Greenhouse Gases (including CO_2 and methane), etc. DO NOT LIST H_2, H_2O, N_2, O_2, and Noble Gases.

[2] Give rate with no control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[3] Give rate with proposed control equipment operating. If emissions occur for less than 1 hr, then record emissions per batch in minutes (e.g. 5 lb VOC/20 minute batch).

[4] Indicate method used to determine emission rate as follows: MB = material balance; ST = stack test (give date of test); EE = engineering estimate; O = other (specify).

EMISSIONS SUMMARY

Name of applicant: Wolf Run Mining Company
Name of plant: Sentinel Mine

Particulate Matter or PM (for 45CSR14 Major Source Determination)

	Uncontrolled PM		Controlled PM	
	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS				
Stockpile Emissions	2.26	9.92	0.56	2.47
Unpaved Haulroad Emissions	303.60	565.87	91.08	169.76
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	**305.87**	**575.78**	**91.64**	**172.23**
POINT SOURCE EMISSIONS				
Equipment Emissions	444.00	612.00	92.40	133.20
Transfer Point Emissions	38.82	53.42	14.04	17.34
Point Source Emissions Total*	**482.82**	**665.42**	**106.44**	**150.54**
Facility Emissions Total	**788.68**	**1,241.21**	**198.08**	**322.76**

*Note: Point Source Total Controlled PM TPY emissions is used for 45CSR14 Major Source determination (see below)

***Facility Potential to Emit (PTE) (Baseline Emissions) = 150.54**

(Based on Point Source Total controlled PM TPY emissions from above) ENTER ON LINE 26 OF APPLICATION

Particulate Matter under 10 microns, or PM-10 (for 45CSR30 Major Source Determination)

	Uncontrolled PM-10		Controlled PM-10	
	lb/hr	TPY	lb/hr	TPY
FUGITIVE EMISSIONS				
Stockpile Emissions	1.06	4.66	0.26	1.16
Unpaved Haulroad Emissions	89.61	167.02	26.88	50.11
Paved Haulroad Emissions	0.00	0.00	0.00	0.00
Fugitive Emissions Total	**90.68**	**171.68**	**27.15**	**51.27**
POINT SOURCE EMISSIONS				
Equipment Emissions	208.68	287.64	43.43	62.60
Transfer Point Emissions	18.36	25.27	6.64	8.20
Point Source Emissions Total*	**227.04**	**312.91**	**50.07**	**70.80**
Facility Emissions Total	**317.71**	**484.59**	**77.22**	**122.07**

*Note: Point Source Total Controlled PM-10 TPY emissions is used for 45CSR30 Major Source determination

INPUTS

Include all information for each emission source and transfer point as listed in the permit application.

Name of applicant: Wolf Run Mining Company
Name of plant: Sentinel Mine

1. CRUSHING AND SCREENING (including all primary and secondary crushers and screens)

1a. PRIMARY CRUSHING

Primary Crusher ID Number	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %
CR-1	Double Roll Crusher	1,350	3,600,000	CS-FE1	80
CR-2	Double Roll Crusher	600	3,600,000	CS-PE34	50

1b. SECONDARY AND TERTIARY CRUSHING

Secondary & Tertiary Crusher ID	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %

1c. SCREENING

Secondary & Tertiary Crusher ID	Description	Maximum Material Processing Capacity TPH	Maximum Material Processing Capacity TPY	Control Device ID Number	Control Efficiency %
S-1	ROM Double Deck Screen	1,350	3,600,000	CS-FE1	80
S-2	ROM Double Deck Vibrating Screen	1,350	3,600,000	CS-FE2	80
S-3	ROM Double Deck Vibrating Screen	1,350	3,600,000	CS-FE2	80

2. TRANSFER POINTS (including all conveyor transfer points, equipment transfer points etc.)

		PM	PM-10
k =	Particle Size Multiplier (dimensionless)	0.74	0.35
U =	Mean Wind Speed (mph)	7	

Transfer Point ID No.	Transfer Point Description Include ID Numbers of all conveyors, crushers, screens, stockpiles, etc. involved	Material Moisture Content %	Maximum Transfer Rate TPH	Maximum Transfer Rate TPY	Control Device ID Number	Control Efficiency %
TP-1	BC-1 To CR-1	4	1,350	3,600,000	CS-FE1	80
TP-2	CR-1 To S-1	4	1,350	3,600,000	CS-FE1	80
TP-3	S-1 To BC-2	4	1,350	3,600,000	CS-FE1	80
TP-4	BC-2 To S-2	4	1,350	3,600,000	CS-FE2	80
TP-4A	S-2 To S-3	4	1,350	3,600,000	CS-FE2	80
TP-5	S-3 To BC-3	5	1,350	3,600,000	CS-FE2	80
TP-6	BC-3 To ST-1 (OS-1)	5	1,350	3,600,000	SL-FE35	80
TP-7	OS-1 To Feeder	5	600	4,400,000	LO-UC1	80
TP-8	Feeder To BC-4	5	600	4,400,000	TC-FE4	80
TP-9	BC-4 To Prep Plant	5	600	4,400,000	TC-FE5	80
TP-10	Prep Plant To BC-5	5	800	4,400,000	TC-FE5	80
TP-11	BC-5 To BC-6 or BC-19	5	800	4,400,000	TC-FE6	80
TP-12	BC-6 To ST-2 (OS-2)	5	800	3,600,000	SL-FE36	80
TP-13	OS-2 To Feeder	5	2,500	3,600,000	LO-UC2	80
TP-14	Feeder To BC-7	5	2,500	4,400,000	TC-FE8	80
TP-15	BC-7 To BS-1	5	2,500	4,400,000	SL-FE9	80
TP-16	BS-1 To Rail	5	2,500	4,400,000	LR-PE16	50
TP-17	Prep Plant To BC-8	5	400	1,980,000	TC-FE5	80
TP-18	BC-8 To BS-2	5	400	2,280,000	SL-FE10	80
TP-19	S-3 To BC-9	5	244	300,000	CS-FE2	80
TP-20	BC-9 To BC-8	5	244	300,000	TC-PE11	50
TP-21	BS-2 To BC-10	5	244	300,000	LO-UC4	80
TP-22	BC-10 To BC-11	5	244	300,000	TC-PE13	50
TP-23	BC-11 To BC-19	5	244	300,000	TC-PE14	50
TP-24	BC-6 to BC-13	5	360	800,000	TC-PE16	50
TP-26	Dozer to UG Feeder	5	360	800,000	N	0
TP-28	BS-2 To BC-14	5	400	1,980,000	LO-UC4	80
TP-29	BC-14 To BS-3	5	400	1,980,000	SL-FE11	80
TP-30	BS-3 To Pan	5	400	1,980,000	LR-PE30	50
TP-31	Pan To Refuse Pile	5	400	1,980,000	N	0
TP-32	TD-1 To OS-4	5	360	800,000	N	0
TP-33	OS-4 To Loader	5	360	800,000	N	0
TP-34	Loader To CR-2	5	360	800,000	CS-PE34	50
TP-35	CR-2 To BC-15	5	360	800,000	TC-PE20	50
TP-36	BC-15 To SS-1 (OS-5)	5	360	400,000	N	0
TP-37	OS-5 To Loader	5	360	400,000	N	0
TP-38	Loader To Truck	5	360	400,000	N	0
TP-39	Truck To Refuse Pile	5	360	400,000	N	0
TP-40	CR-2 To BC-16	5	360	800,000	TC-PE21	50
TP-41	BC-16 To SS-2 (OS-6)	5	360	800,000	N	0
TP-42	OS-6 To OS-1 by dozer	5	360	800,000	N	0
TP-43	BC-19 To BC-17	5	360	800,000	TC-PE22	50
TP-44	BC-17 To BC-18	5	360	800,000	TC-PE23	50
TP-45	BC-20 To OS-7	5	360	800,000	N	0
TP46	OS-7 To Feeder	5	360	800,000	LO-UC3	80
TP-47	BS-2 To Truck	5	150	400,000	UD-PE47	50
TP-48	BC-18 to Radial Stacker BC-20	5	360	800,000	TC-PE48	50
TP-49	BC-6 to Plow to either BC-13/BC-21	5	360	800,000	TC-PE49	50
TP-50	BC-21 to OS-8	5	360	800,000	TC-PE50	50
TP-51	OS-8 to Loader	5	360	800,000	N	0
TP-52	Loader to Truck	5	360	800,000	N	0
TP-53	BC-13 to OS-3	5	360	800,000	SW-WS3	0

change

TP BC 13 to OS-3 ?

3. WIND EROSION OF STOCKPILES (including all stockpiles of raw coal, clean coal, coal refuse, etc.)

p =	number of days per year with precipitation >0.01 inch	146
f =	percentage of time that the unobstructed wind speed exceeds 12 mph at the mean pile height	20

Source ID No.	Stockpile Description	Silt Content of Material %	Stockpile base area Max. sqft	Control Device ID Number	Control Efficiency %
OS-1	Sized Coal Stockpile	5	37,500	SW-WS1	75
OS-2	Clean Coal Stockpile	5	37,500	SW-WS14	75
OS-3	Clean Coal Stockpile	5	62,500	SW-WS3	75
Bin 1	Clean Coal Bin	5	600	SW-FE9	100
Bin 2	Refuse Coal Bin	5	600	SW-FE10	100
Bin 3	Refuse Coal Bin	5	600	SW-FE11	100
OS-4	aw Coal From Truck Dum	5	37,500	SW-WS9	75
OS-5	Sized Coal Stockpile	5	37,500	SW-WS10	75
OS-6	Sized Coal Stockpile	5	37,500	SW-WS2	75
OS-7	Sized Coal Stockpile	5	37,500	SW-WS15	75
OS-8	Clean Coal Stockpile	5	46,875	SW-WS16	75

46,875

4. UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

s =	silt content of road surface material (%)	10
p =	number of days per year with precipitation >0.01 inch	146
M_{dry} =	surface material moisture content (%) - dry conditions	0.2

Item Number	Description	Number of wheels	Mean Vehicle Weight(tons)	Mean Vehicle Speed (mph)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1	Dozer For Sized Coal Transfer	2	32	3	0.04	97	######	HR-WS4	70
2	Dozer For Clean Coal Transfer	2	32	3	0.04	97	######	HR-WS5	70
3	Loader To Truck	4	32	3	0.04	30	######	HR-WS6	70
4	Pan To Spread Refuse	4	50	4	0.1	50	######	HR-WS7	70
5	Dozer For Sized Coal Transfer	2	32	3	0.04	97	######	HR-WS9	70
6	Loader To Truck	4	32	3	0.04	40	######	HR-WS10	70
7	Dozer For Midlings To Feeder	2	32	3	0.04	48	46,875	HR-WS11	70
8	Truck To Refuse	18	25	10	0.1	20	40,000	S12 & HR	70
9									

5. INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

sL =	road surface silt loading, (g/ft^2)	70
P =	number of days per year with precipitation >0.01 inch	146

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1							
2							
3							
4							
5							
6							
7							
8							

1. Emissions From CRUSHING AND SCREENING

1a. Primary Crushing

Primary Crusher ID Number	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
CR-1	27.000	36.000	5.400	7.200	12.690	16.920	2.538	3.384
CR-2	12.000	36.000	6.000	18.000	5.640	16.920	2.820	8.460
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	39.000	72.000	11.400	25.200	18.330	33.840	5.358	11.844

1b. Secondary and Tertiary Crushing

Secondary & Tertiary Crusher ID	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1c. Screening

Screen ID Number	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
S-1	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
S-2	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
S-3	135.000	180.000	27.000	36.000	63.450	84.600	12.690	16.920
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	405.000	540.000	81.000	108.000	190.350	253.800	38.070	50.760

Crushing and Screening	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TOTAL	444.000	612.000	92.400	133.200	208.680	287.640	43.428	62.604

1. Emissions From CRUSHING AND SCREENING (Continued)

EMISSION FACTORS

source: Air Pollution Engineering Manual and References

(lb/ton of material throughput)

PM	
Primary Crushing	0.02
Tertiary Crushing	0.06
Screening	0.1

PM-10	
Primary Crushing	0.0094
Tertiary Crushing	0.0282
Screening	0.047

2. Emissions From TRANSFER POINTS

Transfer Point ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TP-1	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-2	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-3	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-4	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-4A	1.876	2.501	0.375	0.500	0.887	1.183	0.177	0.237
TP-5	1.373	1.830	0.275	0.366	0.649	0.866	0.130	0.173
TP-6	1.373	1.830	0.275	0.366	0.649	0.866	0.130	0.173
TP-7	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-8	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-9	0.610	2.237	0.122	0.447	0.289	1.058	0.058	0.212
TP-10	0.813	2.237	0.163	0.447	0.385	1.058	0.077	0.212
TP-11	0.813	2.237	0.163	0.447	0.385	1.058	0.077	0.212
TP-12	0.813	1.830	0.163	0.366	0.385	0.866	0.077	0.173
TP-13	2.542	1.830	0.508	0.366	1.202	0.866	0.240	0.173
TP-14	2.542	2.237	0.508	0.447	1.202	1.058	0.240	0.212
TP-15	2.542	2.237	0.508	0.447	1.202	1.058	0.240	0.212
TP-16	2.542	2.237	1.271	1.118	1.202	1.058	0.601	0.529
TP-17	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-18	0.407	1.159	0.081	0.232	0.192	0.548	0.038	0.110
TP-19	0.248	0.153	0.050	0.031	0.117	0.072	0.023	0.014
TP-20	0.248	0.153	0.124	0.076	0.117	0.072	0.059	0.036
TP-21	0.248	0.153	0.050	0.031	0.117	0.072	0.023	0.014
TP-22	0.248	0.153	0.124	0.076	0.117	0.072	0.059	0.036
TP-23	0.248	0.153	0.124	0.076	0.117	0.072	0.059	0.036
TP-24	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-26	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-28	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-29	0.407	1.007	0.081	0.201	0.192	0.476	0.038	0.095
TP-30	0.407	1.007	0.203	0.503	0.192	0.476	0.096	0.238
TP-31	0.407	1.007	0.407	1.007	0.192	0.476	0.192	0.476
TP-32	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-33	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-34	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-35	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-36	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-37	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-38	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-39	0.366	0.203	0.366	0.203	0.173	0.096	0.173	0.096
TP-40	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-41	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-42	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-43	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-44	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-45	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP46	0.366	0.407	0.073	0.081	0.173	0.192	0.035	0.038
TP-47	0.153	0.203	0.076	0.102	0.072	0.096	0.036	0.048
TP-48	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-49	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-50	0.366	0.407	0.183	0.203	0.173	0.192	0.087	0.096
TP-51	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-52	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192
TP-53	0.366	0.407	0.366	0.407	0.173	0.192	0.173	0.192

2. *Emissions From TRANSFER POINTS (continued)*

Transfer Point ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTALS	38.816	53.423	14.037	17.338	18.359	25.267	6.639	8.201

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.4 Aggregate Handling and Storage Piles

Emissions From Batch Drop

E = k*(0.0032) * [(U/5)^1.3]/[(M/2)^1.4] = pounds/ton

Where:		PM	PM-10
k =	Particle Size Multiplier (dimensionless)	0.74	0.35
U =	Mean Wind Speed (mph)		
M =	Material Moisture Content (%)		

Assumptions:

k - Particle size multiplier
For PM (< or equal to 30um) k = 0.74
For PM-10 (< or equal to 10um) k = 0.35

Emission Factor
For PM E= $I$88*(0.0032)*((((Inputs!$I$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4))
=lb/ton

For PM-10 E= $J$88*(0.0032)*((((Inputs!$I$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4))
=lb/ton

For lb/hr [lb/ton]*[ton/hr] = [lb/hr]

For Tons/year [lb/ton]*[ton/yr]*[ton/2000lb] = [ton/yr]

3. Emissions From WIND EROSION OF STOCKPILES

Stockpile ID No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
OS-1	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-2	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-3	0.421	1.844	0.105	0.461	0.198	0.867	0.049	0.217
Bin 1	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
Bin 2	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
Bin 3	0.004	0.018	0.000	0.000	0.002	0.008	0.000	0.000
OS-4	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-5	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-6	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-7	0.253	1.106	0.063	0.277	0.119	0.520	0.030	0.130
OS-8	0.316	1.383	0.079	0.346	0.148	0.650	0.037	0.162
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTALS	2.264	9.917	0.563	2.466	1.064	4.661	0.265	1.159

Source:
Air Pollution Engineering Manual

Storage Pile Wind Erosion (Active Storage)

E = 1.7*[s/1.5]*[(365-p)/235]*[f/15] = (lb/day/acre)

Where:

s =	silt content of material
p =	number of days with >0.01 inch of precipitation per year
f =	percentage of time that the unobstructed wind speed
	exceeds 12 mph at the mean pile height

Emission Factors

For PM E=(1.7)*((Inputs!F147)/1.5)*((365-Inputs!I139)/235)*((Inputs!I140)/15)

For PM-10 E=0.47*(1.7)*((Inputs!F147)/1.5)*((365-Inputs!I139)/235)*((Inputs!I140)/15)

For lb/hr [lb/day/acre]*[day/24hr]*[base area of pile (acres)] = lb/hr

For Ton/yr [lb/day/acre]*[365day/yr]*[Ton/2000lb]*[base area of pile (acres)] = Ton/yr

4. Emissions From UNPAVED HAULROADS

Item No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	48.55	172.06	14.57	51.62	14.33	50.79	4.30	15.24
2	48.55	125.14	14.57	37.54	14.33	36.94	4.30	11.08
3	15.02	28.60	4.50	8.58	4.43	8.44	1.33	2.53
4	76.48	134.61	22.95	40.38	22.58	39.73	6.77	11.92
5	48.55	31.28	14.57	9.39	14.33	9.23	4.30	2.77
6	20.02	40.04	6.01	12.01	5.91	11.82	1.77	3.55
7	24.03	11.73	7.21	3.52	7.09	3.46	2.13	1.04
8	22.40	22.40	6.72	6.72	6.61	6.61	1.98	1.98
TOTALS	303.60	565.87	91.08	169.76	89.61	167.02	26.88	50.11

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.2 Unpaved Roads

Emission Estimate For Unpaved Haulroads at Industrial Sites (equation 1)

E= k*((s/12)^a)*((W/3)^b) =lb/vmt

Where:

		PM	PM-10
k =	particle size multiplier	4.90	1.50
a =	empirical constant	0.7	0.9
b =	empirical constant	0.45	0.45
P =	number of days per year with precipitation >0.01 inch	157	

Emission Factors

For PM E= ($I$35)*(((Inputs!$I$163)/12)^($I$36))*(((Inputs!H171)/3)^$I$37))*((365-$I

For PM-10 E= ($J$35)*(((Inputs!$I$163)/12)^($J$36))*(((Inputs!H171)/3)^$J$37))*((365-

For lb/hr (lb/vmt)*(miles per trip)*(Max trips per hour)

For Ton/yr (lb/vmt)*(miles per trip)*(Max trips per year)*(1/2000)

5. Emissions From INDUSTRIAL PAVED HAULROADS

Item No.	PM				PM-10			
	Uncontrolled		Controlled		Uncontrolled		Controlled	
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source:
AP42, Fifth Edition, Revised 11/2006
13.2.1 PAVED ROADS

Emission Estimate For Paved Haulroads

E = [k * (sL/2)^0.65 * (W/3)^1.5 - C] * (1 - (P/4*N) = lb / Vehicle Mile Traveled (VMT)

Where:

		PM	PM-10
k =	particle size multiplier	0.082	0.016
sL =	road surface silt loading, (g/ft^2)	70	
P =	number of days per year with precipitation >0.01 inch	146	
N =	number of days in averaging period	365	
C=	factor for exhaust, brake wear and tire wear	0.0047	0.0047

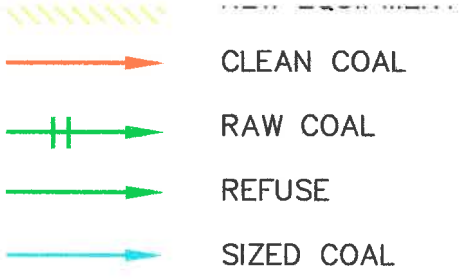
Emission Factors

For PM E= ($I$34*((($I$35)/2)^0.65)*((((Inputs!G190)/3)^1.5)-($I$38))*(1-((Inputs!$I$1

For PM-10 E= ($J$34)*((($I$35)/2)^0.65)*((((Inputs!G190)/3)^1.5))-($I$38))*(1-((Inputs!I

For lb/hr (lb/vmt)*(miles per trip)*(Max trips per hour)

For Ton/yr (lb/vmt)*(miles per trip)*(Max trips per year)*(1/2000)



PROCESS FLOW DIAGRAM

WOLF RUN MINING COMPANY
SENTINEL PREPARATION PLANT

DRAWN BY: RS	SCALE: SCHEMATIC
CREATED: MARCH 2014	MFN 00-33302
REVISED: OCTOBER 2016 (PC)	PLEASANT DISTRICT BARBOUR COUNTY WEST VIRGINIA
PREPARED BY: SURVEYOR AND ASSOCIATES, INC. KINGWOOD, WEST VIRGINIA	

WOLF RUN MINING COMPANY

PLOT PLAN
ATTACHMENT "E"

E: 1" = 80'	CREATED: MAY 2008	REVISED: OCTOBER 2016
00-33302	CREATED BY: RS	REVISED BY: PC

Prepared By:
yor And Associates, Inc.
gwood, West Virginia

PLEASANT DISTRICT
BARBOUR COUNTY
WEST VIRGINIA

Roberts, Daniel P

ID No. 001-00005 - R13-0119D
Co. Wolf Run Mining Company
Pl. Sentinel Prep Plant 6
Initials DPR

From: Nair, Greg <GNair@archcoal.com>
Sent: Monday, October 31, 2016 2:42 PM
To: Roberts, Daniel P
Cc: McKeone, Beverly D; Freeman, Thomas
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant
Attachments: DAQ Comments Response.pdf; PLOT PLAN OCT 2016.pdf; PROCESS FLOW OCT 2016.pdf

Dan,

Please find attached PDF copies of the revisions made based on the comments listed below. I sending via UPS next day a hard copy of the comments to your attention.

If there is any additional information required please let me know.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Friday, October 21, 2016 9:53 AM
To: Nair, Greg
Cc: McKeone, Beverly D
Subject: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

RE: Application Status: Incomplete
Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application No. R13-0119D
Plant ID No. 001-00005

Mr. Nair:

NON-CONFIDENTIAL

Roberts, Daniel P

From: Roberts, Daniel P
Sent: Wednesday, October 26, 2016 3:54 PM
To: 'Nair, Greg'
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

I.D. No. 001-00005 Rec'd R13-01190
Co. Wolf Run Mining Company
Fa. Sentinel Prep Plant 6.
Initials DPR

Greg,

Hey. Yes, please mail them to me.

Let me know if any questions pop up. I will be out of the office tomorrow, but will be back in on Friday.

Dan

From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Wednesday, October 26, 2016 2:00 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Cc: McKeone, Beverly D <Beverly.D.Mckeone@wv.gov>
Subject: RE: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

Dan,

Hoping to have all comments addressed by the end of the week. Once I have them addressed do I mail the corrected pages to you?

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Friday, October 21, 2016 9:53 AM
To: Nair, Greg
Cc: McKeone, Beverly D
Subject: WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

NON-CONFIDENTIAL

Roberts, Daniel P

From:	Roberts, Daniel P
Sent:	Friday, October 21, 2016 9:53 AM
To:	Nair, Greg (GNair@archcoal.com)
Cc:	McKeone, Beverly D
Subject:	WV DAQ Permit Application Incomplete for Wolf Run Mining Company - Sentinel Preparation Plant

RE: Application Status: Incomplete
Wolf Run Mining Company
Sentinel Preparation Plant
Permit Application No. R13-0119D
Plant ID No. 001-00005

Mr. Nair:

Your application for a modification permit for a wet wash coal preparation plant was received by this Division on August 17, 2016 and assigned to the writer for review. The applicant place a Class I legal advertisement in The Barbour Democrat on August 17, 2016. The DAQ received an original affidavit of publication on September 1, 2016. Upon initial review of said application and additional information received, it has been determined that the application as submitted is incomplete based on the following items:

1. Belt conveyor BC-13 and open storage pile OS-3 were previously permitted as part of the refuse circuit. This application now includes them as part of the clean coal circuit. Were they previously constructed and now relocated or were they never constructed?

   The Equipment Table lists BC-13 as a refuse conveyor with maximum capacities of 360 TPH and 800,000 TPY. The Conveying Affected Source Sheet lists BC-13 as a refuse conveyor with maximum capacities of 244 TPH and 800,000 TPY. The emissions calculations spreadsheet still includes BC-13 as part of the refuse circuit and lists transfer point TP-24 as BC-12 to BC-13 with maximum transfer rates of 244 TPH and 300,000 TPY. There is no exit transfer point listed from BC-13 to another piece of equipment or open storage pile. New transfer point TP-49 from BC-6 to Plow to either BC-13/BC-21 includes BC-13 in the clean coal circuit, but once again there is no exit transfer point from BC-13. Please make corrections as necessary to provide consistent information throughout the application.

2. On Attachment F – Process Flow Diagram, the drawing does not include or label belt conveyors BC-3 and BC-19. The drawing depicts belt conveyors BC-17 and BC-18 as part of the refuse circuit being fed by belt conveyor BC-12 and transferring refuse to open storage pile OS-7, but they are listed and described throughout the rest of the application as clean coal conveyors. The Process Flow Diagram also does not include various transfer points, such as TP-6 from BC-3 to OS-1, TP-45 from BC-20 to OS-7. There is no transfer point from BC-13 to OS-3. Most transfer points list their control device, but some do not. Transfer point TP-23 is listed twice… once before belt conveyor BC-12 and once after it. Please make corrections as necessary.

   The drawing depicts new radial stacker BC-20 as part of the refuse circuit and deposits material onto open storage pile OS-7. From open storage pile OS-7, where does the refuse go after it enters the underground feeder at transfer point TP-46? The rest of the application references BC-20 and OS-7 as handling clean coal.

3. On the Equipment Table and the Conveying Affected Source Sheet, belt conveyor BC-1 lists its maximum capacities as 2,500 TPH and 4,400,000 TPY, which was an increase from the previously permitted values of 1,350 TPH and 3,600,000 TPY. However, this appears to be a typo because the crusher that is fed by BC-1 is rated for 1,350 TPH and 3,600,000 TPY as well as everything downstream from there. Please make corrections if necessary.

Belt conveyor BC-15 is listed with a maximum annual capacity of 800,000 TPY on both forms. However, in the Emissions Calculations Spreadsheet Section 1, transfer points TP-35 from CR-2 to BC-15 from BC-15 to OS-5 list the maximum annual transfer rate as 400,000 TPY, which matches the maximum annual throughput for OS-5. Please make corrections as necessary.

Crusher CR-1 is listed with maximum capacities of 1,350 TPH and 3,600,000 TPY on both forms and in the Emissions Calculations Spreadsheet under the transfer points section. However, in the Emissions Calculations Spreadsheet, the inputs list 1,350 TPH and 1,849,303 TPY. Please make corrections as necessary.

Crusher CR-2 is listed with maximum capacities of 600 TPH and 3,600,000 TPY on both forms. However, in the Emissions Calculations Spreadsheet, the inputs list zero TPH and zero TPY. Also, the maximum capacities for transfer points TP-34 from Loader to CR-2 is listed as 360 TPH and 800,000 TPY, TP-35 from CR-2 to BC-15 is listed as 360 TPH and 400,000 TPY and TP-40 from CR-2 to BC-16 is listed as 360 TPH and 800,000 TPY. Please make corrections as necessary.

In the Equipment Table, Open stockpile OS-3 is listed as a refuse stockpile with a maximum base area of 46,875 ft2 and capacity of 300,000 tons. However, the Storage Activity Affected Source Sheet lists open stockpile OS-3 as a clean coal stockpile with a maximum base area of 62,500 ft2 and capacity of 800,000 tons. Open stockpile OS-7 is listed as a sized coal stockpile. However, the Storage Activity Affected Source Sheet lists open stockpile OS-7 as a clean coal stockpile. Please make corrections as necessary.

4. On the Equipment Table and in the Conveying Affected Source Sheet, clean coal belt conveyors BC-5 and BC-6 are listed with a maximum hourly capacity of 800 TPH each. However, in the emission calculations spreadsheet, transfer points TP-10 from the Prep Plant to BC-5 and TP-11 from BC-6 to OS-2 are listed as 600 TPH. Make corrections as necessary.

5. On the Storage Activity Affected Source Sheet, please change the Source Identification Number for Bin 1, Bin 2 and Bin 3 to BS-1, BS-2 and BS-3, respectively, to match information in the rest of the application.

6. In the Emissions Calculations Spreadsheet Section 1, transfer points TP-21 from BS-2 to BC-10, TP-22 from BC-10 to BC-11 and TP-23 from BC-12 to BC-13 all list zero for their maximum hourly transfer rate. Also, BC-13 is now part of the clean coal circuit. Make corrections as necessary.

7. In Section 3 Unpaved Haulroads, Item 8 has a zero entered for number of wheels, mean vehicle weight, mean vehicle speed and miles per trip. Please explain. Make corrections as necessary.

Please address the above deficiencies in writing within fifteen (15) days of the receipt of this email. Application review will not commence until the application has been deemed to be technically complete. Failure to respond to this request in a timely manner may result in the denial of the application.

Should you have any questions, please contact Dan Roberts at (304) 926-0499 ext. 1210 or reply to this email.

Roberts, Daniel P

From: Nair, Greg <GNair@archcoal.com>
Sent: Monday, October 17, 2016 3:49 PM
To: Roberts, Daniel P
Cc: Freeman, Thomas
Subject: RE: Wolf Run Mining Company R13-0119D

I.D. No. 001-00005 Reg. R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Prep Plant Rec'd 6
Initials OPR

Good Afternoon Dan.

Sorry I have not responded sooner. I was on vacation Friday and had a rush project earlier today. Thanks for getting back to me on this application.

You are correct in that we are wanting to add clean coal belt conveyors BC-20 and BC-21, increase the size of the stockpiles OS-3 and OS-8 and the other stockpiles. These are really the only major changes being proposed. A plow is being proposed to be installed in BC-6.

If you have any other questions or need any additional information please let me know.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Roberts, Daniel P [mailto:Daniel.P.Roberts@wv.gov]
Sent: Friday, October 14, 2016 8:21 AM
To: Nair, Greg
Cc: Freeman, Thomas
Subject: RE: Wolf Run Mining Company R13-0119D

Greg,

Hey. It's been crazy and I apologize. I took the application home last night and looked through it. At first look, you are proposing to add clean coal belt conveyors BC-20 and BC-21 and increase the size of stockpiles OS-3 and OS-8 and other stockpiles. What else is changing? The add states a decrease of 58.65 TPY for PM. I will be looking at the current permit today and comparing the proposed information in the application and working on my completeness review.

Thanks,
Dan

Entire Document
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From: Nair, Greg [mailto:GNair@archcoal.com]
Sent: Thursday, October 13, 2016 1:16 PM
To: Roberts, Daniel P <Daniel.P.Roberts@wv.gov>
Cc: Freeman, Thomas <TFreeman@archcoal.com>
Subject: FW: Wolf Run Mining Company R13-0119D

Good Afternoon Dan.

Just wanted to send a short note to see if you could tell me how the application is coming along or where we are at in the stack.

Thanks.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354
Office Direct: (304) 265-9778
Mobile: (304) 290-3202
Email: gnair@archcoal.com

Friends of Coal

From: Nair, Greg
Sent: Thursday, September 22, 2016 11:24 AM
To: Roberts, Daniel P (Daniel.P.Roberts@wv.gov)
Cc: Freeman, Thomas
Subject: Wolf Run Mining Company R13-0119D

Good Morning Mr. Roberts.

I was wondering if you could provide an update on the following application:

Wolf Run Mining Company
Facility ID No. 001-00005
Application No. R13-0119D

The certificate of publication was forwarded to your office on August 30, 2016.

Thank you.

Greg Nair
Arch Coal, Inc.
Manager Surface Mine Planning
Northern Appalachia Operations
100 Tygart Drive
Grafton, WV 26354

input coordinates

enter comma delimited coordinates. examples:
38 15 30.1, -81 25 15.2 (lat, lon as degrees minutes seconds)
38.123456, -81.123456 (lat, lon as decimal degrees)
500000, 4100000 (UTM as easting, northing)
1987654.32, 364123.45 (WV state plane as easting, northing)

581200, 4339200

UTM NAD83 Zone 17N

Convert | zoom to point

output coordinates

39.198267,-80.059645

Lat/Lon NAD83

Google Maps

history (for copy/paste/edit)

1,581200.0,4339200.0,UTM17N NAD83,39.198267,-80.059645,LL NAD83

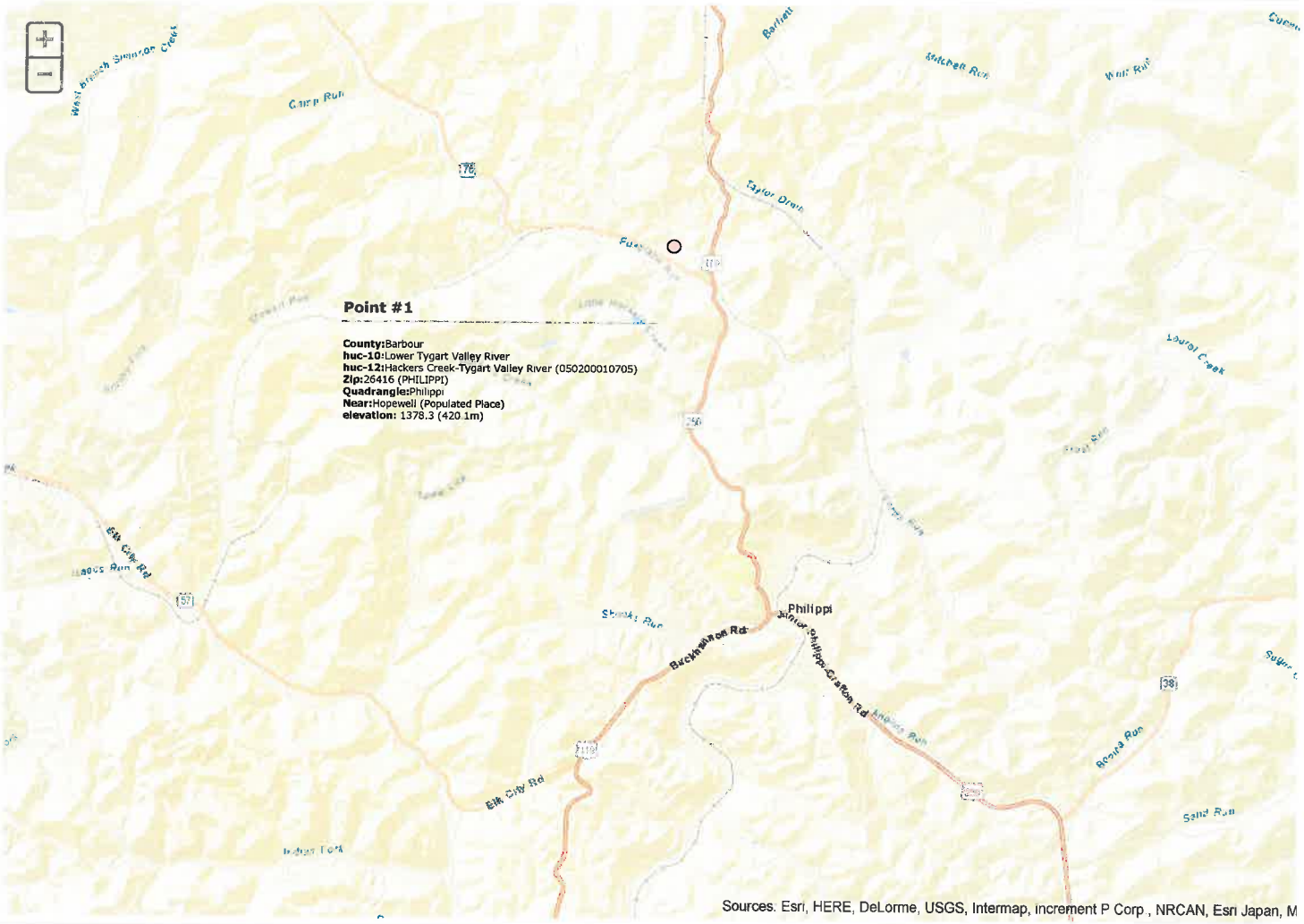
notes about datum conversions

Datum conversions between all realizations of NAD27, NAD83, and WGS84 are not practical, or sometimes not strictly possible. Many of the issues are associated with the inability to convert between the original realization of NAD83 and more recent realizations. While error could be reduced by introducing an intermediate HARN conversion, separate transformations would have to be implemented for each state, which significantly increases the complexity of the application. Therefore datum conversions include a few built-in assumptions:

1. Conversions between NAD27 and NAD83. This converts between NAD27 and NAD83 (1986) using the NADCON transformation. Newer realizations of NAD83, such as NAD83 (CORS96) and NAD83(2011) can differ from NAD83(1986) by a meter or so. This conversion uses the Esri transformation NAD_1927_To_NAD_1983_NADCON.

2. Conversions between NAD27 and WGS84. Basically this just applies the NADCON

Link to previous version



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ID No. 001-00005 Rec'd 8/13-2016
Company: Wolf Run Mining Company
Sentinel Facility
6
DPR

clear markers | street map | image | topo

UC Defaulted Accounts Search Results

Sorry, no records matching your criteria were found.

FEIN:	550699931
Business name:	WOLF RUN MINING COMPANY
Doing business as/Trading as:	

I.D. No. 001-00005 Rec. R13-01190
Company Wolf Run Mining Company
Facility Sentinel Facility 6.
Initials DPR

Please use your browsers back button to try again.

WorkforceWV	Unemployment Compensation	Offices of the Insurance Commissioner

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West Virginia Secretary of State — Online Data Services

Business and Licensing

Online Data Services Help

I.D. No. 001-00005 Reg. RB-0190
Company Wolf Run Mining Company
Facility Sentinel Mining Region 6
Initials DPR

Business Organization Detail

NOTICE: The West Virginia Secretary of State's Office makes every reasonable effort to ensure the accuracy of information. However, we make no representation or warranty as to the correctness or completeness of the information. If information is missing from this page, it is not in the The West Virginia Secretary of State's database.

WOLF RUN MINING COMPANY

Organization Information

Org Type	Effective Date	Established Date	Filing Date	Charter	Class	Sec Type	Termination Date	Termination Reason
C | Corporation	5/23/1990		5/23/1990	Domestic	Profit			

Organization Information

Business Purpose	2121 - Mining, Quarrying, Oil & Gas Extraction - Mining (Except Oil and Gas) - Surface & Underground Coal Mining	**Capital Stock**	5000.0000
Charter County		**Control Number**	0
Charter State	WV	**Excess Acres**	2568
At Will Term		**Member Managed**	
At Will Term Years		**Par Value**	10.000000
Authorized Shares	500		

Addresses

Entire Document
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Type	Address
Local Office Address	300 CORPORATE CENTRE DRIVE SCOTT DEPOT, WV, 25560
Mailing Address	CITYPLACE ONE, SUITE 300 ATTN: TAX DEPARTMENT ST. LOUIS, MO, 63141 USA
Notice of Process Address	C T CORPORATION SYSTEM 5400 D BIG TYLER ROAD CHARLESTON, WV, 25313
Principal Office Address	99 EDMISTON WAY SUITE 211 BUCKHANNON, WV, 26201 USA
Type	Address

Officers

Type	Name/Address
Director	PAUL A LANG CITYPLACE ONE, SUITE 300 ST. LOUIS, MO, 63141
Director	ROBERT G. JONES CITYPLACE ONE, SUITE 300 ST. LOUIS, MO, 63141
Incorporator	DAVID B. SHAPIRO PO BOX 273 CHARLESTON, WV, 25321 USA
President	KENNETH D COCHRAN CITY PLACE ONE, SUITE 300 ST. LOUIS, MO, 63141
Secretary	ROBERT G JONES CITY PLACE ONE, SUITE 300 ST. LOUIS, MO, 63141
Treasurer	JOHN T. DREXLER 300 CORPORATE CENTRE DR SCOTT DEPOT, WV, 25560
Type	Name/Address

Name Changes

Date	Old Name
12/13/2005	ANKER WEST VIRGINIA MINING COMPANY, INC.

Date	Old Name

Date	Amendment
12/13/2005	NAME CHANGE: FROM ANKER WEST VIRGINIA MINING COMPANY, INC.
9/2/1997	MERGER; MERGING BECKLEY SMOKELESS LIMITED LIABILITY COMPANY A QUAL WV LLC WITH AND INTO ANKER WEST VIRGINIA MINING COMPANY, INC. A QUAL WV CORP THE SURVIVOR.
8/29/1997	MERGER; MERGING SPRUCE FORK COAL COMPANY, INC., A WV CORP WITH AND INTO ANKER WEST VIRGINIA MINING COMPANY, INC., A WV CORP. THE SURVIVOR.
8/28/1997	MERGER; MERGING PINE VALLEY COAL COMPANY, INC., A WV CORP, WITH AND INTO ANKER WEST VIRGINIA MINING COMPANY, INC., A WV CORP, THE SURVIVOR.
8/28/1997	MERGER; MERGING ADVANTAGE ENERGY CORPORATION, A WV CORP WITH AND INTO ANKER WEST VIRGINIA MINING COMPANY, INC., A WV CORP, THE SURVIVOR.
7/31/1997	CHANGE OF NAME FROM PHILIPPI DEVELOPMENT, INC. TO ANKER WEST VIRGINIA MINING COMPANY, INC.
Date	Amendment

Annual Reports

Date	Filed For
6/14/2016	2017
6/16/2015	2016
6/16/2014	2015
6/11/2013	2014
6/1/2012	2013
3/28/2011	2012
4/15/2010	2011
6/8/2009	2010
8/15/2008	2009
10/12/2007	2008
3/19/2007	2007
10/7/2005	2006

11/19/2004	2005
6/22/2004	2004
3/4/2003	2003
10/17/2001	2002
9/28/2000	2001
7/10/2000	2000
3/10/2000	2000
	1999
	1998
	1997
	1996
Date	**Filed For**

For more information, please contact the Secretary of State's Office at 304-558-8000.

Friday, September 2, 2016 — 11:38 AM

A subsidiary of:

ArchCoal

SENTINEL COMPLEX

August 30, 2016

ID No. 001-00005 Reg R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Facility 6.
Initials DPR

Mr. Dan Roberts
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304

Subject: Wolf Run Mining Company – Sentinel Complex
Application Status, Facility ID No.: 001-00005
Application No. R13-0119D

Dear Mr. Roberts:

Transmitted herewith is the *Original affidavit for Class I legal advertisement,* for the above subject matter, that appeared in the Barbour Democrat on Wednesday, August 17th, 2016.

Please include this with the initial application for completeness of the package.

Should you have any questions or need additional information, please do not hesitate to contact Greg Nair at 304-265-9778 or at gnair@archcoal.com or myself at 304-457-1895 Ext. 3353 or at tfreeman@archcoal.com

Sincerely,

Tom Freeman

Tom Freeman, P.E.
Environmental Engineer
Sentinel Complex

RECEIVED
SEP 01 2016
WV DEP / DIV OF AIR QUALITY

21550 Barbour County Highway - Philippi, West Virginia 26416
*Phone: (304) 457-1895 Ext. 3353 * Fax: (304) 457-1005*

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OFFICE OF THE BARBOUR DEMOCRAT

I, **John Eric Cutright**, Publisher of **The BARBOUR DEMOCRAT**, a weekly newspaper published in the City of Philippi, County of Barbour, and State of West Virginia, do certify that the annexed:

LEGAL NOTICE

was duly printed in said paper one week commencing on Wednesday, the **17th** day of **August, 2016**.

Given under my hand at Philippi, West Virginia, this **17th** day of **August, 2016**.

_____, Publisher ____

Printer's Fee.....$37.28

AIR QUALITY PERMIT NOTICE
Notice of Application

Notice is given that Wolf Run Mining Company, 100 Tygart Drive, Grafton, West Virginia 26354 has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a Modification Permit for a Coal Preparation Facility located on Route 76, near Philippi, in Barbour County, West Virginia. The latitude and longitude coordinates are: Latitude 39° 12' 00" and Longitude 80° 03' 02".

The applicant estimates there will be a decrease in the potential to discharge the following Regulated Air Pollutants: for Particulate Matter a decrease of 58.65 tons per year and for Particulate Matter under 10 microns a decrease of 27.56 tons per year.

Startup of operation is planned to begin on or about the 21st day of November, 2016. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57th Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.
Dated this the 17th day of August, 2016.

By: Wolf Run Mining Company
Greg Nair
Power of Attorney
100 Tygart Drive
Grafton, West Virginia 26354

8-17

STATE OF WEST VIRGINIA
COUNTY OF BARBOUR; to wit

Sworn to and subscribed before me this **17th** day of **August, 2016**.

NOTARY PUBLIC

My Commission Expires October 16, 2023.

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
KRISTINA MORAN
The Barbour Democrat
P.O. Box 459
Philippi, West Virginia 26416
My Commission Expires Oct. 16, 2023

RECEIVED
SEP 01 2016
WV DEP / DIV OF AIR QUALITY

ID No. 001-00005 R13-0119D
Co. Wolf Run Mining Company
Fac. Sentinel Facility 6
Initials DPR

Roberts, Daniel P

From: Freeman, Thomas <TFreeman@archcoal.com>
Sent: Tuesday, August 30, 2016 7:22 AM
To: Adkins, Sandra K; Roberts, Daniel P
Cc: Nair, Greg; Freeman, Thomas
Subject: WV DAQ Permit Application Status for Wolf Run Mining Company; Philippi
Attachments: Publication Affidavit 08172016.pdf

Dear Ms. Adkins:

Per email dated August 18th, 2016 to Mr. Greg Nair, ACI – Northern App. Manager of Surface Mine Planning, concerning the application for modification permit to the Sentinel Preparation Plant; transmitted herewith is a scanned copy of the original affidavit for Class I Legal advertisement for Wolf Run Mining Company's – Philippi (Sentinel Complex), Facility ID No. 001-00005, Application No. R13-0119D.

The original is being mailed to Mr. Roberts today. Please include this affidavit with the initial application for completeness of the package.

Should you have any questions or need additional information, please do not hesitate to contact Greg Nair at 304-265-9778 or at gnair@archcoal.com or myself at 304-457-1895 Ext. 3353 or at tfreeman@archcoal.com.

Sincerely,

Tom Freeman, P.E.
Environmental Engineer
Sentinel Complex

21550 Barbour County Highway
Philippi, West Virginia 26416
(304) 457-1895 Ext. 3353 (Office)
(304) 517-3168 (Cell)

Entire Document
NON-CONFIDENTIAL

August 30, 2016

Ms. Dan Roberts
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street, SE
Charleston, West Virginia 25304

Subject: Wolf Run Mining Company – Sentinel Complex
Application Status, Facility ID No.: 001-00005
Application No. R13-0119D

Dear Mr. Roberts:

Transmitted herewith is the *Original affidavit for Class I legal advertisement,* for the above subject matter, that appeared in the Barbour Democrat on Wednesday, August 17th, 2016.

Please include this with the initial application for completeness of the package.

Should you have any questions or need additional information, please do not hesitate to contact Greg Nair at 304-265-9778 or at gnair@archcoal.com or myself at 304-457-1895 Ext. 3353 or at tfreeman@archcoal.com

Sincerely,

Tom Freeman

Tom Freeman, P.E.
Environmental Engineer
Sentinel Complex

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Notice of Application

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Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.
Dated this the 17th day of August, 2016.

By: Wolf Run Mining Company
Greg Nair
Power of Attorney
100 Tygart Drive
Grafton, West Virginia 26354

STATE OF WEST VIRGINIA
COUNTY OF BARBOUR; to wit

Sworn to and subscribed before me this **17th** day of **August, 2016.**

NOTARY PUBLIC

My Commission Expires October 16, 2023.

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
KRISTINA MORAN
The Barbour Democrat
P.O. Box 459
Philippi, West Virginia 26416
My Commission Expires Oct. 16, 2023

Roberts, Daniel P

From: Ward, Beth A
Sent: Thursday, August 18, 2016 4:08 PM
To: Roberts, Daniel P
Subject: WOLF RUN MINING COMPANY PERMIT APPLICATION FEE

This is the receipt for payment received from:

WOLF RUN MINING COMPANY, PHILIPPI, CHECK NUMBER 202268, CHECK DATE 08/04/2016, $2,000.00
R13-0119D ID# 001-00005

OASIS Deposit CR 1700018334

Thank You!

ID No. 001-00005 Rev. R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Facility 6
Initials DPR

Beth Ward

WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
BTO FISCAL
601 57TH STREET SE
CHARLESTON, WV 25304
(304) 926-0499 EXT 1846
beth.a.ward@wv.gov

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Adkins, Sandra K

From: Adkins, Sandra K
Sent: Thursday, August 18, 2016 10:35 AM
To: 'gnair@archcoal.com'
Cc: McKeone, Beverly D; Roberts, Daniel P
Subject: WV DAQ Permit Application Status for Wolf Run Mining Company; Philippi

RE: Application Status
Wolf Run Mining Company
Philippi
Facility ID No. 001-00005
Application No. R13-0119D

Mr. Nair,

Your application for a modification permit for the Sentinel Preparation Plant was received by this Division on August 17, 2016, and was assigned to Dan Roberts. The following item was not included in the initial application submittal:

Original affidavit for Class I legal advertisement not submitted.

This item is necessary for the assigned permit writer to continue the 30-day completeness review.

Within 30 days, you should receive a letter from Dan stating the status of the permit application and, if complete, given an estimated time frame for the agency's final action on the permit.

Any determination of completeness shall not relieve the permit applicant of the requirement to subsequently submit, in a timely manner, any additional or corrected information deemed necessary for a final permit decision.

Should you have any questions, please contact the assigned engineer, Dan Roberts, at 304-926-0499, extension 1210.

R13-0119D Dan
001-00005 modification

45CSR13 Administrative Update, Construction, Modification, Relocation, Temporary Permit or General Permit Registration Incomplete Application

A complete application is demonstrated when all of the information required below is properly prepared, completed and attached. The items listed below are required information which must be submitted with a 45CSR13 permit application. Any submittal will be considered incomplete if the required information is not included. The applicant must submit a complete application in order to receive a 45CSR13 permit.

☒ Class I legal advertisement not published in a newspaper certified to accept legal advertisements and original affidavit submitted.

☐ Application fee AND/OR additional application fees not included:
- ☐ $250 Class I General Permit
- ☐ $300 Class II Administrative Update
- ☐ $1,000 Construction, Modification, Relocation or Temporary Permit
- ☐ $500 Class II General Permit
- ☐ $1,000 NSPS
- ☐ $2,500 NESHAP
- ☐ $2,500 45CSR27 Pollutant
- ☐ $5,000 Major Modification
- ☐ $10,000 Major Construction

I.D. No. 001-00005 Reg. R13-0119D
Company Wolf Run Mining Company
Facility Sentinel Facility Region 6
Initials DPA

☐ Original and two (2) copies of the application not submitted.

☐ File organization – application pages are not numbered or in correct order, application is not bound in some way, etc.

☐ Confidential Business Information is not properly identified.

☐ General application forms not completed and signed by a responsible official.

☐ Authority of Corporation form not included – required if application is signed by someone other than a responsible official.

☐ Applicant is not registered with the West Virginia Secretary of State's Office.

☐ Copy of current Business Registration Certificate not included.

☐ Process description, including equipment and emission point identification numbers, not submitted.

☐ Process flow diagram, including equipment and emission point identification numbers, not submitted.

☐ Plot plan, including equipment and emission point identification numbers, not submitted.

☐ Applicable technical forms not completed and submitted:

- ☐ Emission Point Data Summary Sheets
- ☐ Air Pollution Control Device Sheets
- ☐ Emission Unit Data Sheets
- ☐ Equipment List Form

☐ Emission calculations not included – emission factors, references, source identification numbers, etc.

☐ Electronic submittal diskette not included.

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